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NATURAL HISTORY
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Breeding European Stonechats in Cumbria

The Eurasian Curlew – a UK conservation priority

Slender-billed Curlews in the Middle East



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Front-cover photograph: Eurasian Curlew *Numenius arquata*, Cornwall, September 2015. *Richard Chandler*

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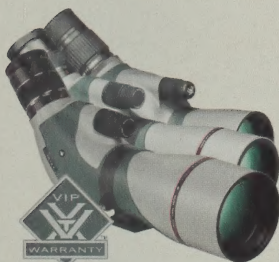
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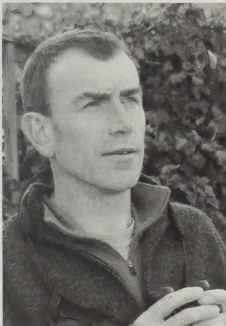
British Birds

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It's always a pleasure to publish the results of a really good amateur study in *BB* – and the one in this issue, on European Stonechats by John Callion, is an excellent example. So much dedication and effort goes into a quarter-century of nest-finding, ringing and general observation; the findings for any individual year from a project such as this are seldom groundbreaking, but when you can plot changes over the long term the results are fascinating.

Distinctly less heart-warming is the paper on the Eurasian Curlew by Dan Brown and his colleagues. To me, the Curlew is still a common bird – I can see it from my house pretty much every day of the year. The suggestion that the Curlew is the most pressing bird conservation priority in the UK comes as something of a shock, but the thought that it could suffer the same fate as the Eskimo and Slender-billed Curlew is quite another matter. The third paper in this issue, a new review of Slender-billed Curlew records in the Middle East, suggests that the signs of that bird's demise were perhaps clearer than we realised. In other words, we weren't paying enough attention. We need to make sure that the same accusation can't be levelled in relation to the Eurasian Curlew in the decades to come.

Roger Riddington



British Birds aims to: ❖ provide an up-to-date magazine for everyone interested in the birds of the Western Palearctic; ❖ publish a range of material on behaviour, conservation, ecology, identification, movements, status and taxonomy as well as the latest ornithological news and book reviews; ❖ maintain its position as the journal of record; and
❖ interpret scientific research on birds in an easily accessible way.

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The effect of light pollution at night on birds

Now that the long, dark winter nights have returned, those of us lucky enough to live around Blakeney or Cley are that much more aware of our lack of streetlights, and of how, on dark starry nights, the Norfolk sky is as black and the stars twinkle as brightly as ever. Even better are the skies over the Northumberland National Park, officially recognised as having the darkest skies in England. People in many other parts of the globe see a very different sky at night. Artificial light is spreading around the world. City lights are now estimated to be five times brighter than the natural sky, and more than two-thirds of the population of the USA cannot see the Milky Way with the unaided eye.

It has long been known that birds are attracted to lit buildings at night. The frontispiece of William Eagle Clarke's *Studies in Bird Migration* (Gurney & Jackson, 1912) is a dramatic painting of birds swarming around the Eddystone Lighthouse (south of Rame Head, in Cornwall) at night. Fatalities during the autumn migration were described in *BB* in 1928 from observers on lightships off the Norfolk coast (*Brit. Birds* 21: 242–251), but the accounts given by Eagle Clarke at the Eddystone Lighthouse and Heinrich Gätke on Helgoland are dramatic in the extreme, and the sheer numbers of birds attracted to the light astonishing.

Something similar now happens on an even larger scale, as well-lit tower blocks in cities pose the same threat for birds migrating over land as did the old and isolated coastal lighthouses. One bizarre instance is that the New York authorities have commemorated the 9/11 attack on the World Trade Centre by shining two high-powered beams into the sky; these beams can be literally filled 'with twittering birds so thick they look like a cloud of bugs'. Much recent information comes from Canada and the USA, but what is happening here in the UK, and in Europe, where buildings are getting ever taller? Should we follow Toronto's lead and have our own Fatal Light Awareness Programme (FLAP – see www.flap.org)?

No-one ever knew the true scale of the

mortality that lighthouses caused, because naturally most of the corpses fell into the surrounding water. Now, however, it has been possible to put some gruesome figures on what many American ornithologists believe is one of the leading causes of migratory bird mortality in North America. It has taken a long time, though, for the problem to achieve such notoriety that action had to be taken. As far back as 1978, ornithologists from the Field Museum of Natural History in Chicago were picking up dead birds from around the McCormick Building because they were a source of new specimens that didn't require that the Museum killed them for the collection. One night the lights in the building were turned off because the exhibition hall wasn't being used, and the nightly 'catch' of corpses went down from 1,297 to 192, a reduction of over 80%. This, of course, was just a single building. At another building, a local Audubon Society member was told by the manager that some nights the birds had to be picked up off the roof by the shovel.

Chicago was one of the first cities in the USA to address the problem, starting a 'lights out' programme in 2000, but Chicago was actually following Toronto's lead in 1993 with its Fatal Light Awareness Programme. This was supported by most of the city's skyscrapers, though FLAP estimates that Toronto has 950,000 registered buildings that could potentially kill a total of nine million birds a year. One unexpected but sobering result was that though night-time collisions were dramatically reduced, they began to be outnumbered by daytime collisions into windows. It has been estimated that some five million birds annually fly through Chicago, and the city's Department of the Environment estimates that tens of thousands are killed annually. Across North America, the number has been estimated at more than 100 million. In an effort to do something about it, the Governor of New York announced in April 2015 that non-essential lights in state-run buildings would be turned off, and many other landmark buildings have signed up to the National Audubon Society's 'Lights Out' programme.

While there is now greatly increased awareness, and resulting mitigation, of this problem in Canada and the USA, we can only wonder what is going on in the Far East. Cities such as Singapore, Shanghai, Beijing and Hong Kong lie on the routes of millions of migrating birds and personal experience suggests that the lighting at night is probably worse than in New York.

There are plenty of other consequences for birds (and other animals) from factors that alter their circadian rhythm. Humans can suffer an array of health problems when their daily biological cycle is altered through working night shifts, and there may be problems for animals as well. The year-long cycle of light is one of the most important environmental cues for birds, and they synchronise their internal clocks with light to time their daily and seasonal foraging, communication, reproduction and migration. Shorebirds near city beaches may benefit from being able to forage for longer, but they may also be more susceptible to predation. And we can only speculate on the effect of light pollution on the success of owls hunting in urban neighbourhoods.

Prompted by the discovery, by researchers at the University of Memphis, that hormonal changes in California Scrub Jays *Aphelocoma californica* may interfere with reproduction, scientists around the world have been gathering mounting evidence that city lights are altering the physiology of urban birds. Oestrogen and testosterone are suppressed, and the birds are changing their singing, mating and feeding behaviour. Behavioural ecologists in Vienna are researching the effects of artificial light on the orientation and activity of birds, and are currently studying reproductive behaviour of Blue Tits *Cyanistes caeruleus* in the Vienna forests. There is evidence that earlier song from males prompted by artificial light falsifies their advertised 'quality', so allowing males of lesser 'quality' to breed. There is also a mismatch to the reaction to light between the sexes, which affects not only mating behaviour but the growth and development of nestlings. This raises questions about long-term reproductive fitness and the potential for ecological and evolutionary consequences.

Another study, this time in Germany, has found that Blackbirds *Turdus merula* in

Munich exposed to artificial light reach sexual maturity quicker than Blackbirds in the nearby woods. Researchers fitted light loggers to 100 individuals, and the additional light exposure caused urban birds to perceive that the day was on average 49 minutes longer – so that in early March they were experiencing the day length that the birds in the woods experienced in late March.

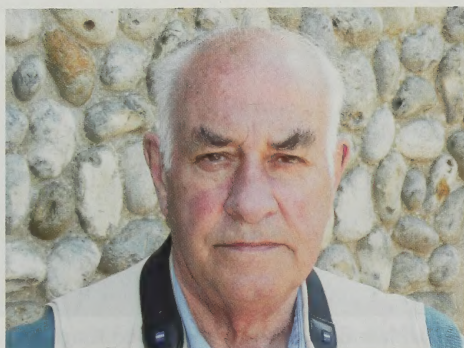
Light pollution is not just affecting birds, and there are many examples revealed by research into subjects as diverse as Greater Bird's-foot-trefoil *Lotus pedunculatus* and fruit bats *Artibeus* in Costa Rica. Light pollution can even affect the regeneration of tropical forests, because it disrupts the behaviour of seed-dispersing bats, since they avoid foraging in artificial light.

A look at an image of the earth at night shows the dramatic glow of light in North America and Europe, with more localised hotspots elsewhere. This situation will continue to develop, and how it will affect mortality and migration routes of birds and insects, and indeed the rhythm of nature itself, is anybody's guess.

Further reading

- Dominoni, D. D. 2015. The effects of light pollution on biological rhythms of birds: an integrated mechanistic perspective. *J. Ornithol.* 01/2015; doi: 10.1007/s10336-015-1196-3
- & Partecke, J. 2015. Does light pollution alter day length? A test using light loggers on free-ranging European Blackbirds. *Phil. Trans. Roy. Soc. B* 370: 20140118; doi: 10.1098/rstb.2014.0118
- Gaston, K. J., Bennie, J., Davies, T. V., & Hopkins, J. 2013. The ecological impact of night-time light pollution – a mechanistic appraisal. *Biological Reviews* 88: 912–927.
- Schoech, S. J., Bowman, R., Hahn, T. P., Goymann, W., Schwabl, I., & Bridge, E. S. 2013. The effects of low light at night upon the endocrine physiology of Western Scrub-Jays. *J. Experimental Zoology A* 319: 527–538; doi: 10.1002/jez.1816

Martin Woodcock



News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Kingfisher killing sparks outrage

The first photograph of a male Guadalcanal Moustached Kingfisher *Actenoides excelsus*, mist-netted in the Solomon Islands, was widely admired. The American research team wrote lyrically about the discovery (on the Audubon website the news was subtitled 'After evading scientists for decades, the adorable "ghost bird" of the Solomon Islands is finally ready for its close-up'). But in a subsequent report the researchers admitted they'd killed the bird for their museum collection, sparking a furious debate about 'collecting' in the era of DNA analysis and digital technology.

This is how American Museum of Natural History expedition leader Chris Filardi described finding the kingfisher on the AMNH website (<http://bit.ly/1K4h5Nz>): 'Still some species defy the familiar. These are the poorly known, reclusive animals that even when observed never fully shake the legend and mystery surrounding them. They are ghosts, until they reveal themselves in a thrilling moment of clarity and then they are gone again.'

'In the western Pacific, first among these ghost species is the Moustached Kingfisher, a bird I have sought for nearly 20 years. Described [from] a single female specimen in the 1920s, two more females brought to collectors by local hunters in the early 1950s, and only glimpsed in the wild once. Scientists have never observed a male. Its voice and habits are poorly known. Given its history of eluding detection, realistic hopes of finding the bird were slim.

'Until on our third morning [when] we heard an unmistakable "ko-ko-ko-kokokokokokokoko-kiew" of a bird that could only be a large forest kingfisher. We paused, waited for what seemed like eternity, and then there in plain sight pumping its tail, crest alert, in full colours, was the Moustached Kingfisher. And then, like a ghost, it was gone.'

'But only for the moment. Over the next several days, we continued to hear birds calling sporadically in taller moss forests of the ridge, but had a difficult time finding them. We set mist-nets out in the forest with the hope of capturing an individual, and after a cloud-raked morning of dripping rains and cold winds, we captured a male bird, identifiable by its magnificent all-blue back (females have greenish backs). When I came upon the netted bird in the cool shadowy light of the forest, I gasped aloud, "Oh my God, the kingfisher." One of the most poorly known birds in the world was there, in front of me, like a creature of myth come to life.'

But it didn't remain alive for much longer, as Filardi and his team 'euthanised' the bird (to use their euphemism for killing it) and it's now a ghost once more, if dead birds have ghosts. Audubon (the BirdLife affiliate in the USA) publicised the discovery on its website www.audubon.org/news/moustached-kingfisher-photographed-first-time and then amended it to include the crucial detail about the specimen's collection. There are more than 90 contributions from people reacting to the news.

Collecting a specimen is established scientific practice when a new species is described although, as Chris Filardi points out, female specimens of the kingfisher already exist. But is nineteenth-century scientific procedure still required in the twenty-first century? DNA samples and digital photography can establish specific identity without recourse to killing the animal being studied. The recent (2006) description of the Bugun Liocichla *Liocichla bugunorum* in India was achieved without taking a specimen; in this case it was



378. Male Guadalcanal Moustached Kingfisher *Actenoides excelsus*.

considered inappropriate to collect a specimen as the population size had not been assessed and was believed to be very small. See <http://bit.ly/1GEOFgH>

Following the firestorm of criticism for his actions, Chris Filardi wrote a subsequent defence: <http://bit.ly/1QlnrMH> He said: 'During this survey work, we recorded several calling individuals in an area totalling about a square kilometre, estimating three pairs and possible offspring or social groupings (in one instance we detected three birds in a small forest glade). The total land area of Guadalcanal is roughly 5,300 km². If, conservatively, 15% of this area represents suitable habitat, and if we assume densities we encountered are on the high end, this gives a population estimate of over 4,000 individuals, a robust number for a large island bird. Significantly, habitat in the documented elevation range of the Moustached Kingfisher (800 m to at least 1,500 m) remains largely as it has been for centuries.

'In this context, the decision to collect an individual specimen of the Moustached Kingfisher as part of our survey work reflects standard practice

for field biologists. Ethical collection of any individual organism is determined by basic criteria including collection below levels that will impact populations, adherence to permitting guidelines, and consideration of the importance of voucher specimens. With this first modern voucher of the kingfisher, the only adult male, we now have a comprehensive set of material for molecular, morphological, toxicological, and plumage studies that are unavailable from blood samples, individual feathers, or photographs.'

Taxonomic note: BirdLife regards 'Moustached Kingfisher' as two species, Guadalcanal *A. excelsus* and Bougainville Moustached Kingfisher *A. bougainvillei* – and the IUCN Red List follows this and classifies Guadalcanal as Endangered www.iucnredlist.org/details/22726883/0

(Readers of our digital edition can click on all these links and read the articles online. Here's another, written by Prof. Marc Bekoff from Colorado University in the *Huffington Post*: <http://huff.to/1JrQrb0>)

Dungeness flycatcher was an Acadian

So far, it seems that the rare bird event of the autumn took place in Kent in September (although perhaps the Wilson's Warbler *Cardellina pusilla* on Lewis runs it close). DNA analysis of a faecal sample obtained during the mystery *Empidonax* flycatcher's one-day stay at Dungeness on 22nd September has confirmed its identity as Acadian Flycatcher *E. virescens* (new to Britain – although the formal assessment has not started yet). The DNA analysis was carried out by Martin Collinson (chairman of both the BOU Records Committee and the BB Editorial Board) and you can read more about the story on the Rare Bird Alert website, including the gripping finder's

account by Martin Casemore: <http://bit.ly/1G9j7jd>

Martin Collinson said: 'The sequence we got was fed into the online database of every bird that has ever been sequenced and was identical to three of the four individuals of Acadian Flycatcher from USA and Mexico that were in there, and one base pair different from the fourth bird. In contrast, all other species of *Empidonax* were at least 8–9% different. On this basis, we can say with 100% confidence that the Dungeness bird was genetically an Acadian Flycatcher.'

And this swift identification of a cryptic species was achieved without having to 'euthanise' the bird in question...

Stanley Johnson receives the RSPB Medal

Stanley Johnson, the journalist, author, environmentalist and former Conservative MEP – and father of London Mayor Boris Johnson – has been awarded the RSPB Medal in recognition of his contribution to nature conservation. He was chosen to receive the RSPB Medal because of his role in enacting the EU Habitats Directive, in 1992. Together with the 1979 Birds Directive, these pieces of legislation – and their interpretation by the European Court of Justice – have proved to be the strongest tool for protecting nature across Europe. For the past year, the European Commission has been consulting on whether to open up

the two laws for review, meaning they are under threat of being weakened. Over 520,000 people from across Europe, including more than 100,000 from the UK, responded to the consultation, calling for the Directives to be retained in their present form.

Stanley Johnson said: 'As an environmental campaigner, I have worked for many years with the RSPB and welcomed their support during my Brussels years as we pushed for the adoption of EU-wide measures for nature protection, notably with the Birds and Habitats Directives. The development of NATURA 2000, Europe's nature

protection network, is one of the EU's success stories.

'I applaud the efforts by the RSPB and the Europe-wide consortium of NGOs who are now more determined than ever to resist the current ill-conceived attempts to weaken or rewrite this vital EU legislation.'

Steve Ormerod, RSPB Chairman, said: 'We are thrilled to award the RSPB Medal to Stanley. We believe the wonderful contribution he has made to nature conservation over several decades deserves wider recognition. In particular, Stanley's role in shepherding through the legislation for the Habitats Directive, in the face of often fierce opposi-

tion, is one that should be admired and applauded. Nature is all the better for that piece of regulation and it's so important its future is secured.'

Previous RSPB Medal winners include HRH The Prince of Wales (2010), Sir David Attenborough (2000) and Bill Oddie (1997). In 2012 there was a very unusual winner: the entire community of Tristan da Cunha were awarded the Medal for their efforts when the ship *MS Oliva* ran aground at Nightingale Island, 30 km from Tristan da Cunha, spilling 1,500 tonnes of oil into the sea and threatening globally endangered species, including two-thirds of the world's population of Northern Rockhopper Penguins *Eudyptes moseleyi*.

They came from a galaxy far, far away...

A seabird colony off the coast of southwest Ireland has been turned into a film set – not for a wildlife documentary but for the latest Star Wars movie. And the Irish Government's decision to let a Hollywood film crew land on the island at the end of the breeding season has been condemned by BirdWatch Ireland.

The island in question is Skellig Michael, which lies 13 km off the Kerry coast. The UNESCO World Heritage Site is owned by the State and was once home to a sixth-century Christian monastery made up of stone 'beehive huts' for hermit monks. The most recent seabird population figures available for Skellig Michael, taken from the Seabird 2000 survey, estimated the presence then of 9,994 breeding pairs of European Storm-petrel *Hydrobates pelagicus* (10% of the national population) and 738 breeding pairs of Manx Shearwater *Puffinus puffinus*, both species which still have young in their burrows well into September.

Their lonely retreat caught the eye of the location scouts at Walt Disney Pictures and Lucasfilm, who saw the huts as an ideal retreat for Luke Skywalker. And on 8th September, Irish heritage minister Heather Humphreys (responsible for the Irish Film Board and Ireland's National Parks and Wildlife Service) granted permission for up to 180 Star Wars cast and crew members to travel to the island. Within hours of the announcement, they arrived with masses of filming equipment, and production there lasted almost two weeks.

The mid-September filming date meant that many breeding seabirds, Puffins *Fratercula arctica*, Kittiwakes *Rissa tridactyla*, Guillemots *Uria aalge* and Razorbills *Alca torda* had already finished nesting and had departed the island with their chicks. However, thousands of storm-petrel and shearwater chicks would still have been in their nesting burrows at the time of the shoot, since they don't fledge until late September or October.

Permission was even granted for night-time helicopter filming on and around the island, at times when parent birds would have been returning from sea to feed their waiting chicks.

'The lack of transparency in this case is particularly galling,' said Dr Stephen Newton, senior seabird conservation officer with BirdWatch Ireland. 'It simply isn't acceptable that decisions that may adversely affect one of Europe's most important seabird colonies have been made in such a secretive way, without consultation or discussion... especially given the fact that the other island in the group, Little Skellig, is a BirdWatch Ireland reserve and that both islands are jointly designated as an IBA for breeding seabirds.'

'Even if we assume the best – that no chicks or birds were affected – the risk of the accidental introduction of invasive alien predators such as the Brown Rat *Rattus norvegicus* and the American Mink *Neovison vison* during the transportation of filming equipment does not seem to have been factored in.'

This was not the first visit to the island by the Star Wars crew. Despite fierce objections from BirdWatch Ireland and other Irish NGOs, and concerns from UNESCO, filming took place there in July 2014 for two weeks during the seabird breeding season. Long-term effects on the island's breeding bird populations remain unknown, but there are disturbing reports that during filming, several hundred Kittiwake chicks were blown by a helicopter from their cliff-ledge nests into the sea, where they drowned.

The State's failure to carry out comprehensive surveys at this and other seabird nesting sites since 2000, despite being obliged to do so by law, severely hampers any assessment of the true impact of the Star Wars filming activity. It may now never be possible to judge the long-term effects on the island's vulnerable seabird populations.

Eric Ennion – Ripples from the House on the Shore

Eric Ennion was one of the outstanding bird artists of the twentieth century, and his work – and the importance he placed on drawing birds from life – has been a major influence on many of today's finest wildlife artists. Since almost all of Eric's work is in private collections, a major new exhibition at the Sunderland Museum & Winter Gardens is a rare opportunity to see a wide selection in one place. It is free to enter and remains open until 13th December. The exhibition features his work from 1950 onwards with particular emphasis on his years at Monks' House Bird Observatory, on the Northumberland coast.



Fig. 1. Common Guillemots *Uria aalge* and Razorbills *Alca torda*, by Eric Ennion.

Garden bird feeders have shaped Blackcap evolution

New research by the BTO has revealed that bird food provided in British gardens has helped the rapid evolution of a new migration route for Blackcaps *Sylvia atricapilla*. This is the first time that garden bird feeding has been shown to affect large-scale bird distributions.

Blackcaps traditionally stayed in Britain only to breed. Over the last 60 years there have been surprising changes in Blackcap migration behaviour, with birds from central Europe visiting British gardens in winter, rather than heading to their usual wintering grounds in southern Spain. The reasons why Britain was so attractive to Blackcaps were previously unclear, but now scientists have been able to uncover some answers using the extensive data on garden birds and feeders collected by thousands of volunteer birdwatchers for the BTO's weekly Garden BirdWatch survey.

The new study, published in the international journal *Global Change Biology* (<http://bit.ly/1L7Rlms>), has revealed that Blackcaps are becoming increasingly associated with garden bird feeding over time, and that supplementary foods, particularly fats and sunflower hearts, are affecting their national distribution in winter. The findings also indicate that changes in the British winter climate have been important in shaping the evolution of this new migration behaviour.

Kate Plummer, BTO Research

Ecologist and lead author of the paper, said: 'This is the first scientific evidence that supplementary foods provided in gardens can influence the evolution of wild birds, so the findings are extremely important. It's been suspected for a long time that Blackcaps started coming to Britain in winter to take advantage of the bird food being provided in gardens. However, it's only now that we have actually found concrete evidence to support this, thanks to the efforts of citizen scientists.'

As the global environment rapidly changes due to human activities, it is becoming increasingly important that we understand if, and how, species are able to respond. These findings indicate that some species, like the Blackcap, may be more resilient to environmental change than we previously assumed.



Mike Lane/FLPA

379. Blackcap *Sylvia atricapilla*, Warwickshire, April 2013.

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Some observations of breeding European Stonechats in Cumbria

John Callion

Abstract A long-term study of European Stonechats *Saxicola rubicola* in western Cumbria is summarised. Observations of incubating females revealed some hitherto unknown behavioural patterns, indicating the state of incubation by the readiness of the female to return to incubate. Results from colour-ringing have shown that some juveniles travel over 40 km to form small groups during the period of post-juvenile moult. Some siblings have been discovered to have different migration strategies, and the evidence suggests that an individual retains a particular migratory pattern for life.

Introduction

A study of European Stonechats *Saxicola rubicola* was initiated in western Cumbria in 1990, mainly using nest recording together with ringing and colour-ringing of nestlings. This summary of some of the results comprises two separate but related parts, first outlining the methodology and fieldwork techniques employed, with some notes on selected observations and aspects of breeding biology, and second some of the results from the ringing data.

The Stonechats breeding in Britain and Ireland are partial migrants and the subspecies involved (*S. r. hibernans*) occurs predominately in maritime areas, breeding also in the Channel Islands, western Brittany and along the west coast of Portugal (Urquhart 2002). Recent British and Irish atlas data show that during periods when overwinter survival is high there is some expansion of the breeding range to the east (Balmer *et al.* 2013). Ringing recoveries show that a proportion of British and Irish Stonechats migrate to western Mediterranean countries in winter, and as far south as Algeria and Morocco (Helm *et al.* 2006), whereas others remain close to their natal area in the winter.

Stonechats are fairly long-legged ground feeders, they perch in open situations and are relatively approachable – they don't dive for

cover or disappear over the horizon when an observer approaches; all of this makes them ideal candidates for colour-ringing studies. These factors, together with a reasonable supply of birds from an increasing breeding population, persuaded me to start a colour-ringing project near my home in west Cumbria in 1990, which has continued to the present.

The study area and its Stonechats

Almost all the birds in the study were ringed as nestlings, which means that for subsequent sightings the birds are of known age and origin, and most were fitted with a unique combination of colour rings. Fewer than ten adults were ringed, caught using either mist-nets (with a tape lure) or baited Chardonneret traps. This proved to be too labour intensive, however, so plans to catch adults were terminated in order to focus on other aspects.

The nests were located in four main areas of west Cumbria (see fig. 1).

1. The coastal strip adjacent to the Barrow to Carlisle railway line (Braystones, St Bees, Nethertown and Lowca) and the B5300 road north of Maryport (Allonby/Mawbray) at an altitude just above sea level
2. Wythop Fells (Sale and Ling Fell), at 300 m asl

3. Skiddaw Forest (upper and lower Mosedale Valley), at 350–450 m asl
4. The western Ennerdale Fells (Knockmurtun and Cold Fell), at 300 m asl

The altitude of the majority of nests was thus close to sea level, along the coastal strip, or inland at 300–450 m asl. The area between the coastal strip and the fells is predominantly intensive agriculture, unsuitable for nesting Stonechats. One nest, outside the main study area in the Buttermere Valley, was found at 590 m asl in 1996, the highest on record for Britain and Ireland (Urquhart 2002). Fuller & Glue (1977) analysed 408 British and Irish Nest Record Cards, of which only two were higher than 122 m asl, whereas all (approx. 600) of my inland nests were either above, or close to the 300-m contour line.

In total, I have data for over 1,300 Stonechat nests in the study area. It was not unusual to find large numbers of nests, and in fact the numbers of nests found and of chicks ringed very much depended on my available time. All the data have been submitted to the BTO, either through ringing returns or their Nest Record Scheme. During 1990–94, an average of 40 nests was found each year, but in 1995 (with a little more effort and an increase in the population) 137 nests were found. During 1995–2005, the same locations and broadly comparable survey effort produced an increased annual average of 87 nests; the best years were 1999 with 139 nests and 2004 with 143 nests.

All Stonechats attempt at least two broods, and overwintering birds may make three nesting attempts when spring is early. Typically, a successful triple-brooded pair could

produce 15 chicks in a season. From my data the highest productivity was achieved by a pair on Sale Fell, Wythop, in 1999, with clutches of six, seven and six (and all 19 chicks fledged).

Nest-finding: techniques and observations

I used good old-fashioned fieldcraft to find nests, techniques learnt initially as a child from my father, then developed by looking for the nests of a widespread group of passerine species such as Robin *Erithacus rubecula*, Dipper *Cinclus cinclus*, Grey Wagtail *Motacilla cinerea*, Willow Warbler *Phylloscopus trochilus* and Blackcap *Sylvia atricapilla*. I had to wait until I moved to the Cumbrian coast at 11 years old before finding Stonechat nests. The greatest attributes of a successful nest-finder are a



Fig. 1. Map of the study areas. Copyright and database right Ordnance Survey 2015.

combination of patience and learning from mistakes, as well as discovering the importance of any specific behaviours of the target species. In terms of Stonechats, I very quickly learnt to keep my distance, keeping a low profile and being careful not to show my silhouette above the skyline. Given that Stonechats are birds of open ground, this can be challenging, and the observer often has little cover for watching. I discovered that only the female incubates the clutch, however, so at the egg stage my technique involved watching the male until the female appeared, at which point I would ignore the male and concentrate on the female until she returned to the nest. Progressively, in the early years and as I found more nests, I learnt some of the secrets of their behaviour. I discovered two particular indicators of female 'off nest' activity that signalled the stage of incubation, and these became very useful in minimising my visits to nests:

1. In the first week of incubation, brooding periods are of approximately one hour's duration; at this time, when the female comes off to feed, she does so in a leisurely manner: feeding is interspersed with periods of preening and perching, and she can be away from the nest for up to 30 minutes. As incubation progresses, the feeding becomes more frenetic, with no obvious preening and a swift return to the nest is the norm. In the last few days of incubation, she is off the nest for only 2–3

minutes at a time and will incubate for up to three hours without relief. During this time, apart from opportunistic feeding, the male is largely inactive.

2. At the conclusion of each feeding episode, the female will defecate and wipe her beak, either with her foot, or on a nearby piece of vegetation. It is critical at this time not to lose sight of her as she flies, very low, back to the nest site, where she quickly dives back to the nest.

Once the eggs have hatched, both parents share feeding responsibilities equally.

As the study progressed, it became relatively easy to find nesting birds, since most of the territories were in the same location. Within years, if a nest was successful, the second (or third) attempt would be within 20 m of the original nest. I have never found a pair reusing a nest, however, and, as discussed in Greig-Smith (1982), I found that when a nest was predated and the female survived, they would always relocate and nest more than 100 m away.

All records of triple brooding relate to a combination of overwintering birds and an early spring. Returning migrants that arrive in late March or early April simply don't have the time to raise three broods. In my study areas I regularly see migrating birds running the gauntlet of established pairs throughout March and into early April. The data from Walney Bird Observatory, in the south of the county, confirm that migrants are most in

evidence at this time, although spring migration is already underway in mid February (see fig. 2, which also includes breeding pairs on Walney Island).

Mild winters during most years of my study have meant that overwintering birds were in prime breeding condition early in the year, resulting in a continuous run of high productivity and recruitment. At the time of the highest population, it was not unusual to have as

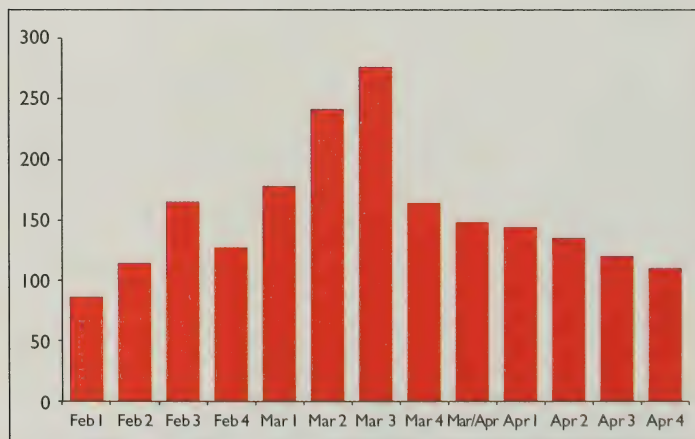


Fig. 2. Daily census counts of European Stonechats *Saxicola rubicola* in spring (February to April inclusive) at Walney Bird Observatory, Cumbria. The chart shows the total number of individuals logged for each given week over a 24-year period, 1990–2013.



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380. Mosedale, looking south towards Skiddaw, June 2015. In this part of the valley, most Stonechat *Saxicola rubicola* nests are in Heather *Calluna vulgaris*.

many as seven pairs in a single 1-km square in the most suitable inland habitats and up to five pairs per km in the best of the linear coastal stretches. This is similar to the densities on the Ayrshire coast in the 1960s (Phillips & Greig-Smith 1980), and contributes to a degree of near-colonialism for what is typically an aggressively territorial species. In years when populations were lower, territories were correspondingly larger, and the mapped pattern more akin to a patchwork quilt.

Number of birds ringed

From 1990 to 2013, 3,700 nestlings were ringed, of which approximately 2,200 were colour-ringed using a series of eight single-coloured rings (green, blue, sky blue, pink, purple, orange, red and white). Each bird carried two colour-rings and a metal BTO ring. By using a combination of sequences and ring positions I was able to ring over 1,000 individuals without repetition. On several occasions, after exhausting the colour combinations (in 1995 I ringed over 500 nestlings), I ceased colour-ringing to avoid duplication of combinations on surviving birds. I allowed four years before reviving

original colour sequences. There are no sightings of a colour-ringed bird older than three years in my study, and the longest-lived ringed Stonechat, according to BTO data, is four years 11 months.

Breeding biology

Breeding pairs comprised a mixture of birds that overwintered on or near to existing territories, dispersed individuals (especially upland birds that spent the winter on the coast) and returning migrants from wintering grounds farther south. Of colour-ringed nestlings seen in the following breeding season, females have a dispersal distance on average more than twice that of males (fig. 3). Despite colour-ringing c. 2,200 nestlings, I have never seen a pair composed of two of my colour-ringed birds, either in summer or in winter. The history of one coastal female showed that, during the course of one calendar-year, she had at least four different males in attendance (Callion 1991). Having completed post-juvenile moult in the company of another juvenile female, she subsequently paired with a male in October. In March, when spring migration was underway, she had the attention of

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381. Sale Fell, Wythop, showing the southeast-facing slope above Kelsick Farm, in June 2015; here, all Stonechat nests are in the Gorse *Ulex europaeus* above the track or in Bracken *Pteridium aquilinum*.

three different males in succession. The female nested in April, but deserted after engineering works destroyed part of the territory. After the breeding season, in October, I trapped her in the same territory with an accompanying male that was found to be a bird of the year.

Territories and nesting

In an early (warm) spring, a pair that has overwintered may begin territorial song and display as early as the second week in February. This scenario can result in first-egg dates as early as 10th March (in 1999). A cold, wet spring suppresses breeding activity, with egg-laying typically delayed until mid April, as in 2013, when the first egg was found on 12th April. Surprisingly, considering the decrease in temperature with

altitude, I found no difference in any one year for first-egg dates between coastal and inland sites. A late spring limits nesting attempts to two broods for all pairs, whereas in an early spring many pairs might raise three broods, at both coastal and inland sites.

A comparison of inland and coastal birds

Of the two contrasting habitat types in the study area there are several comparisons and differences to note.

Inland

With only a very few exceptions, nests at inland sites were in either Heather *Calluna vulgaris* or Gorse *Ulex europaeus*. Some of the highest territories were near Skiddaw House at 450 m asl, while many other territories in Skiddaw Forest, in the Mosedale Valley, were over 350 m asl. Here, where the valley was steep-sided, the aspect of the nest site seemed to be important with all territories and nest sites facing south or southeast. This was also the situation on both Ling and Sale Fell, Wythop, though territories were lower at around 300 m asl.

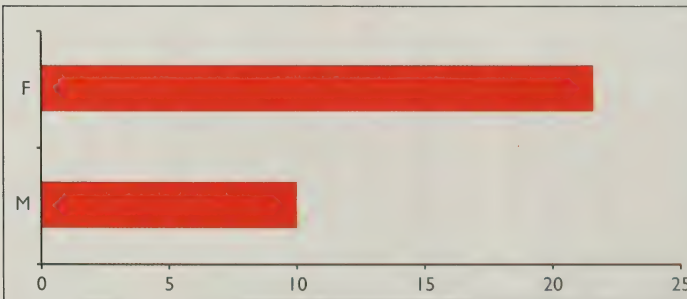


Fig. 3. Mean distance (km) from natal site to first-year breeding site for European Stonechats *Saxicola rubicola* in the study area, during the first ten years of the study (sample comprises 23 females, 31 males).

The other inland study area, in the Ennerdale foothills of Knockmurton and Cold Fell, was at a height of around 250–300 m asl. Here, the terrain is flatter, thus allowing more time for sun penetration, and the aspect of territories and nest site was mixed, with no obvious preference.

Coastal

South of St Bees, the Barrow–Carlisle railway runs parallel to Cumbria's west coast, and the embankment provides ideal nesting habitat for Stonechats, the vegetation being comprised mainly of grasses, Gorse, Bramble *Rubus fruticosus* agg. and roses *Rosa*. The majority of the vegetation is kept short (primarily as a result of regular burning), which seems much preferred by Stonechats. Invariably nest aspect is west-facing, and early morning foraging generally takes place on the sunnier foreshore.

North of Maryport, along the route of the B5300 road to Silloth, there is a narrow (c. 80–120 m wide) linear stretch of almost continuous habitat between the road and the coast, running for about 15 km; this is ideal for Stonechats, with a variety of nest-site

choices, including Gorse, Heather, Bramble, rank grass and Marram *Ammophila arenaria*. Several nests have been found in Marram within 10 m of the tideline of the highest spring tides.

Nest sites

Stonechats are catholic in their selection of nest sites when there is a choice; for example, a pair that nested on the coast at Mawbray in 2003 used Gorse for the first nest, Heather for the second and a grass tussock for the third. At some sites, such as Knockmurton, Cold and Sale Fell, there is only Gorse. Ling Fell and the lower Mosedale Valley have both Gorse and Heather, and occasionally dead Bracken *Pteridium aquilinum* is used for first nests. The upper Mosedale Valley is exclusively Heather, which accommodates all nests. As the population increased, towards the end of the 1990s, I found Stonechats occasionally nesting in Soft-rush *Juncus effusus* in some upland areas, often to the exclusion of the Whinchats *S. rubetra* that had nested there in previous years. However, there is no evidence of a direct link between the increase in Stonechats and the decline of



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382. The west-facing aspect of Harrington, with the former sea cliff just inland from the railway, June 2015. Here, most Stonechat nests are found on the railway embankment, or (occasionally) on the cliff.

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383. Mawbray, looking north across the Solway Firth to Dumfries & Galloway, June 2015. Stonechat nests here are mostly in Heather or grass.

Whinchats (Henderson *et al.* 2014).
Apart from some nests in Gorse, all nests are invariably on or close to the ground; even in Gorse, the nests are very low, generally within 10 cm of the ground. Stonechats have a preference for short Gorse, mostly <1 m, and shun taller, lanky plants for nesting. Sometimes in Gorse, but especially in grass, the nest is often at the end of a right-angled tunnel up to half a metre long. This design is likely to serve two purposes: first to hide the nest, second to minimise the effect of adverse weather. Heather nests are buried under the plant, often in a soft depression.

Observations in winter

The Stonechat is unusual among passerines in that birds generally winter in pairs and establish territories. There seems no obvious explanation as to why the pair bond is

maintained in winter, other than the fact that two birds are better able to defend a territory than one. It would seem logical that overwintering pairs remain together during the breeding season, yet Rödl (1995) showed that, in Israel, the paired birds changed partners regularly and pairs mostly split up before leaving the wintering areas in spring.
My data show that the winter pair bond appears strong and that birds are seldom more than 20 m apart, perhaps suggesting that the extra vigilance in winter habitats – generally extremely open, with limited cover – is a distinct advantage. In the breeding season, until the chicks are hatched, the male spends much of his time guarding the female as she builds the nest, then later as she feeds and relaxes during breaks from incubation. In winter, the pairs are more interdependent.

Table 1. The approximate percentage of vegetation types in which European Stonechat *Saxicola rubicola* nests were found in different parts of the study area. Some 1,300 nests were located during the study, roughly 60% inland and 40% on the coast.

	Gorse (%)	Heather (%)	Grass (%)
Inland			
Skiddaw Forest	20	70	10
Ling Fell	90	10	0
Sale Fell	100	0	0
Knockmurton	100	0	0
Cold Fell	100	0	0
Coastal			
Maryport–Beckfoot	60	20	20
Sellafield–Harrington	70	0	30



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384. A Stonechat nest at Mawbray, in luxuriant grassland on the edge of the dunes, June 2015. The grass species include Marram *Ammophila arenaria*, Cock's-foot *Dactylis glomerata*, Yorkshire-fog *Holcus lanatus*, Perennial Rye-grass *Lolium perenne* and Smooth Meadow-grass *Poa pratensis*. Herb species are Yarrow *Achillea millefolium*, Common Restharrow *Ononis repens*, Ribwort Plantain *Plantago lanceolata*, Lesser Trefoil *Trifolium dubium* and White Clover *T. repens*.

Coastal birds

Most nesting territories are also occupied during the winter months but winter territories are usually larger than breeding ones. Additional pairs are found along the coastal strip in winter, and they establish territories either adjacent to breeding territories or in areas where breeding does not usually occur. These extra territories are formed after completion of moult and appear to be as important for winter survival as the summer ones are for breeding; winter territories are used annually and some have been occupied every year since 1990. Occasionally, these territories hold colour-ringed birds, both from inland and from coastal parts of my study area, but mostly they contain unringed birds, which suggests that these are immigrants. These territories are vacated towards the end of March, and this supports the belief that the winter occupants are inland birds from

elsewhere, perhaps farther north. There is no indication from my colour-ringing data to confirm any fidelity, either to a territory or to a pair bond, in winter.



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385. Male Stonechat from the nest in plate 384; June 2015.

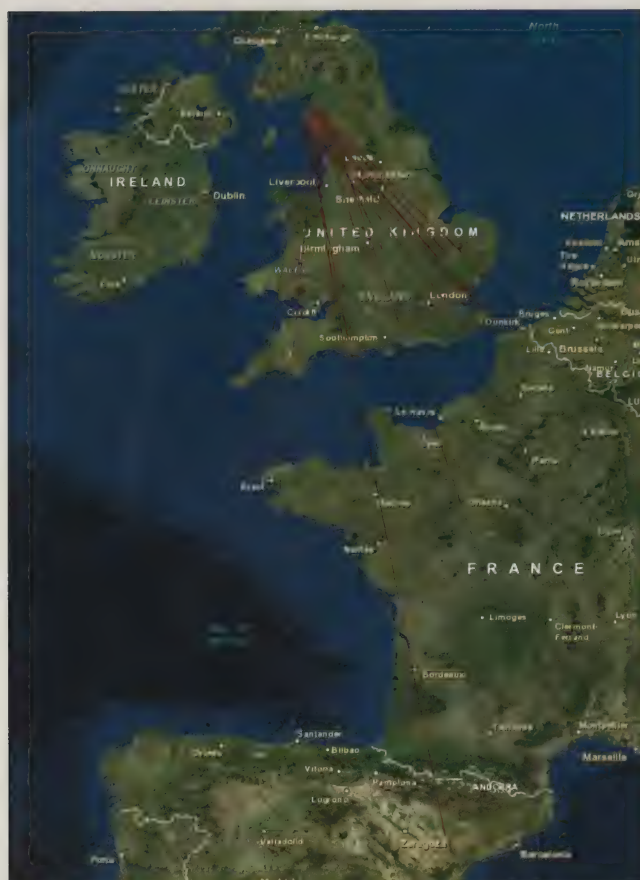


Fig. 4. European Stonechat *Saxicola rubicola* ringing recoveries from the Cumbrian study area, 1990–2013; those >100 km shown. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.

Observations of coastal winter pairs suggest that tidal wrack and much of the west-facing foreshore is an important source of food. Stonechats have been seen feeding among Turnstones *Arenaria interpres* and Rock Pipits *Anthus petrosus*, and on several occasions I have seen them closely following Turnstones and obtaining food items opportunistically.

Inland birds

I spent less time at inland sites in winter and the information gleaned is sporadic, but it is clear that many of the upland territories are unoccupied in winter, especially on the steeper slopes, where there is little or no sun in winter. Colour-ring sightings confirm that

some adults and some first-winters overwinter in upland areas. It seems likely that, for the birds that remain, territorial limits are less constricted than during the breeding season, and that birds have access to large tracts of land. Even though the weather conditions in winter are likely to be more challenging at higher altitude than on the coast, upland birds probably have fewer avian predators to contend with than those on the coast.

I have records of colour-ringed chicks from upland sites that have wintered within 2 km of their natal site, others that have moved to the coast in winter and some which have migrated to continental Europe. One example of a bird that moved from the uplands to the coast in winter is an individual that hatched in Skiddaw Forest in 1990, spent the winter on the Cumbrian coast and the following spring was found breeding inland at Wythop, 15 km from its natal site. Yet there are no records of birds hatched in upland territories which have bred on the coast or vice versa.

Results and observations from ringing and colour-ringing Foreign recoveries

By the end of 2013, 45 British- and Irish-bred Stonechats had been recovered abroad (BTO data). All but one of the recoveries were from countries bordering the western Mediterranean, with 27 from Spain, ten from France, one from Portugal, four from Algeria and two from Morocco (the exception being a bird in Belgium). Of these, four are from my study: one from Spain and three from France, two from coastal nests and two from upland sites. The Spanish recovery is unusual, being found dead in a car radiator near Huesca (northeast Spain) on 7th May 2002, at a time when Spanish Stonechats are well advanced in their breeding cycle; the bulk of returning spring

Table 2. Selected sibling recoveries.

Ring number	Ringing date	Place of ringing	Recovery date	Recovery site	Distance
F505327	16th May 1990	Braystones, Cumbria	15th October 1991	Sandwich Bay, Kent	481 km
F505328	"	"	7th October 1993	Sandwich Bay, Kent	481 km
T656510	30th April 2006	Wythop, Cumbria	27th February 2008	Landguard, Suffolk	427 km
T656513	"	"	27th September 2006	Trunvel, Finisterre, France	752 km
F505395	20th June 1991	Nethertown, Cumbria	2nd January 1992	Lowca, Cumbria	15 km
"	"	"	28th July 1992	Lowca, Cumbria	15 km
F505396	"	"	14th October 1991	Dungeness, Kent	505 km

migrants are normally passing through Britain and Ireland in March. Of the three French recoveries, two were probably still on autumn passage (in Finisterre, on 27th September 2006 and 24th October 2010), while the other seemed to be wintering inland on the Loire (6th January 1997).

Long-distance (>100 km) recoveries within Britain and Ireland

Of the 16 longer-distance recoveries of birds ringed in my study, there is a distinct orientation to the shorter sea crossing through the Strait of Dover, with another out from Portland Bill, in Dorset (fig. 4). The timings of the recoveries suggest a broad date span of movements in autumn, with birds arriving in southern England as early as 6th September and as late as 24th October. There is also an intriguing recovery of an individual that was in Cumbria on 24th September and at Sandwich Bay, Kent, on 5th November the same year (and not seen subsequently); it could perhaps have been a very late migrant.

Age of migrants

It is well known that in many species a greater proportion of young birds migrate, compared with adults. The data from my study show that both adults and first-year Stonechats migrate, with two long-distance recoveries of two-year-old birds and two of older birds (fig. 5).

Table 2 gives the details of three sets of extraordinary sibling recoveries from my study. Another set of recoveries, not shown in table 2, concerns subsequent broods of the same parents in the same year. In this instance an individual from the second brood was in France on 24th October 2010, while two siblings from the first brood were in Cumbria in January 2011, close to where they were reared, but 10 km apart.

Further analysis of my recovery data shows that those individuals that undertake long-distance migrations can come from either first or second broods, with no obvious bias in terms of fledging date: these are birds that have fledged in April, May, June and July.

I have no long-distance (>100 km) recoveries from third broods, however, and perhaps it is the case that birds fledged in mid or late August simply don't have time to undergo both moult and migration. As an example of a third-brood youngster moving a short distance, a bird from a brood in Skiddaw Forest, ringed on 3rd August 1990, was seen on the Cumbrian coast on 12th December

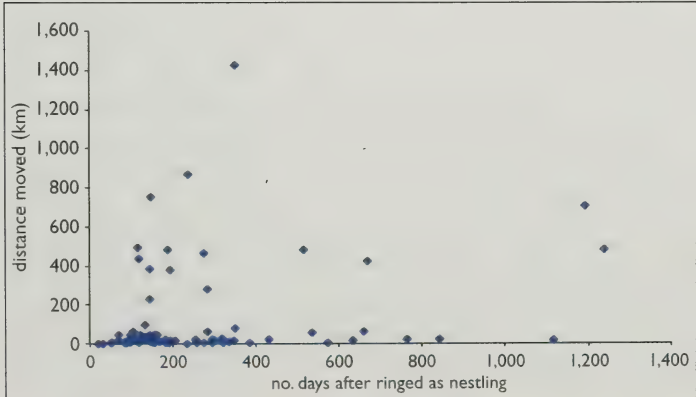


Fig. 5. Distance and age of dispersing European Stonechats *Saxicola rubicola* from the Cumbrian study area.

that year, some 47 km from its natal area; and it was subsequently discovered breeding at Wythop, 15 km from where it was hatched. (This is the same bird referred to above as having moved from an inland breeding area to a coastal wintering one.)

Three nestlings that turned out to be long-distance migrants were ringed in late April, which would give first-egg dates in late March or the first few days of April. These dates suggest that the parents had overwintered in the study area, since returning migrants would not have had time to establish territory, form a pair, acquire breeding condition, build a nest and lay eggs by late March or early April. In turn, this shows that resident parents can produce offspring that become long-distance migrants.

Juvenile dispersal and moulting groups

During the early 1990s, while looking for third broods, I came across a situation that was initially puzzling: in late July and throughout August, I recorded five 'groups' of moulting birds, ranging from a minimum of six to a maximum of ten individuals. They were exclusively juveniles and contained a mixture of both unringed and colour-ringed birds; the minimum number of colour-ringed birds was three and the maximum was six.

These groups were located on the coast, away from nesting territories; further analysis

showed that there were never any siblings among the colour-ringed birds, even when there were six in the group of ten. Perhaps more surprisingly, the composition of the group included individuals from both the coast and the upland areas as well as birds from both first and second broods, but not from the same parents. Some birds had moved as far as 44 km to join these moulting groups, with birds travelling from all compass points except west.

The benefit of forming such groups with other, unrelated youngsters is unknown, but must have some measure of survival value at such a critical time in a young bird's life. Presumably, the general benefits of flocking are the most important ones, particularly in that it provides more birds to scout for potential sources of danger, especially during moult. The fact that Stonechats spend so much time on open perches, away from cover, makes such a strategy especially advantageous in this species. Another possible benefit is that after moult some of these birds may form winter pairs and perhaps stay together to breed; avoiding your siblings in such groups would thus minimise the risk of inbreeding.

Discussion

The British and Irish population of Stonechats has evolved to become partially migratory, combining individuals which are resident, short-distance or long-distance migrants and thus avoiding the risk of either migratory or residential disaster. The differences in migration strategy between siblings shown by my data confirm the variation. In the years before and after the turn of the millennium, the British and Irish population was at an all-time high, both numerically and in terms of its distribution (Balmer *et al.* 2013), leading to speculation that with a changing climate and a run of mild winters, the subspecies *hibernans* might start to

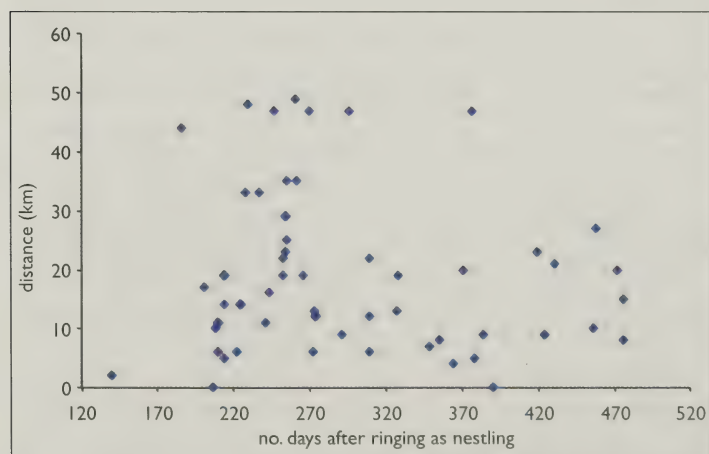


Fig. 6. The relationship between fledging date and dispersal distance of European Stonechats *Saxicola rubicola* ringed in the study area, 1990–2013. For first-year birds, only movements of <100 km are included. All data are from Cumbria and involved birds located during subsequent breeding seasons.

become wholly resident. However, the cold winters of 2009/10 and 2010/11 had a catastrophic effect on the British wintering population, leading to a marked reduction in the number of territorial pairs. In my study areas, those on the Cumbrian coast suffered the greatest declines. On the coast north of Maryport there were 15 breeding pairs in the summer of 2009, whereas there was only one in 2010 and none in 2011. Inland at Knockmorton and Cold Fell there was a combined total of nine pairs in 2009, which was reduced to six pairs in spring 2010 and then four in 2011 (which perhaps suggests that a greater proportion of inland birds are migrants). This seems to suggest that, even when hard winters are few and far between, *hibernans* looks set to remain as a partial migrant.

Acknowledgments

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often been my field companion (and my legs), and I dedicate this paper to him.

References

- Balmer, D. E., Gillings, S., Caffrey, B. J., Swann, R. L., Downie, I. S., & Fuller, R. J. (eds.) 2013. *Bird Atlas 2007–11: the breeding and wintering birds of Britain and Ireland*. BTO Books, Thetford.
- Callion, J. 1991. A year in the life of a Stonechat. *Cumbria Bird Club News* 1991: 3.
- Fuller, R. J., & Glue, D. E. 1977. The breeding biology of the Stonechat and Whinchat. *Bird Study* 24: 215–228.
- Greig-Smith, P. W. 1982. Dispersal between nest-sites by Stonechats *Saxicola torquata* in relation to previous breeding success. *Ornis Scandinavica* 13: 232–238.
- Helm, B., Fielder, W., & Callion, J. 2006. Movements of European Stonechats *Saxicola torquata* according to ringing recoveries. *Ardea* 94: 33–44.
- Henderson, I., Callandine, J., Massimino, D., Taylor, J. A., & Gillings, S. 2014. Evidence for contrasting causes of population change in two closely related, sympatric breeding species the Whinchat *Saxicola rubetra* and Stonechat *Saxicola torquata* in Britain. *Bird Study* 61: 553–565.
- Phillips, J. S., & Greig-Smith, P. 1980. Breeding and wintering sites of Stonechats. *Bird Study* 27: 255–256.
- Rödl, R. 1995. The wintering of territorial Stonechat pairs *Saxicola torquata* in Israel. *Journal für Ornithologie* 136: 423–433.
- Urquhart, E. 2002. *Stonechats: a guide to the genus Saxicola*. Christopher Helm, London.

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The Eurasian Curlew – the most pressing bird conservation priority in the UK?

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Abstract Based on its adverse global conservation status, and the global importance but rapid decline of the UK's breeding population, the Eurasian Curlew *Numenius arquata* should now be considered the UK's highest conservation priority bird species. A co-ordinated UK recovery programme is urgently required to help ensure that this species does not suffer the same fate as that of some other *Numenius* species.



Phil McLean/FLPA

386. Eurasian Curlew *Numenius arquata*, Lammermuir Hills, Borders, June 2012. Most of the UK's breeding Curlews are in Scotland and England but these populations have declined by 55% and 32% respectively between 1995 and 2013 (see text for further detail).

Introduction

If we consider the UK's bird populations from a global perspective, then, apart from the endemic Scottish Crossbill *Loxia scotica*, it is breeding seabirds and wintering waterbirds for which the UK shoulders the greatest global responsibility. For example, the UK supports over 50% of the world breeding populations of Manx Shearwater *Puffinus puffinus*, Northern Gannet *Morus bassanus*, and Great Skua *Stercorarius skua* (table 1). Our coasts and wetlands are renowned for supporting internationally important numbers of many species of waders and wildfowl during the winter, when the oceanic climate offers relatively mild conditions (Hayhow *et al.* 2014). However, if we consider species for which the UK supports globally important breeding populations (i.e. $\geq 10\%$) alongside the global conservation status of those species and their population trends within the UK, then a rather different picture emerges (table 1).

The UK supports more than 10% of the global breeding population of 18 bird species across a diverse range of taxa (table 1). Within this group, the Eurasian Curlew *Numenius arquata* (hereafter 'Curlew') stands out for all the wrong reasons: it is classified as globally Near Threatened (NT) on the IUCN Red List of Threatened Species (www.iucnredlist.org), and the UK population (an estimated 19–27% of the global breeding population) is declining rapidly. Indeed, the rate of the UK population's decline is among the highest recorded across the range (Brown 2015). On the basis of national population sizes and known trends, it is likely that UK declines are having a greater adverse impact on the global population than those of any other country.

International status

The Curlew was listed as globally Near Threatened in 2008, in response to the decline of several key national breeding populations, including that of the UK, and the resulting assessment that the species was undergoing a moderately rapid global population decline (www.birdlife.org). The nominate subspecies *N. a. arquata*, which accounts for most of the global population, breeds across northern Europe to the Ural Moun-

tains; to the east, *N. a. arquata* intergrades into *N. a. orientalis*, while a third subspecies, the poorly studied *N. a. suschkini*, is confined to the steppes south of the Urals and in Kazakhstan (Engelmoer & Roselaar 1998; Delany *et al.* 2009; Wetlands International 2015).

Breeding and wintering populations in Britain and Ireland

The latest UK population estimate, of 68,000 breeding pairs in 2009 (Musgrove *et al.* 2013), means that only Russia and Finland have larger breeding populations (Brown 2015). However, this globally important breeding population has been declining since the 1970s (Baillie *et al.* 2014). Most of the UK's breeding Curlews are in Scotland and England (O'Brien 2004), but the Breeding Bird Survey (BBS) indicates declines of 55% and 32% respectively between 1995 and 2013 (Harris *et al.* 2015). BBS trends cannot be calculated for Wales or Northern Ireland, since Curlews now occur in too few squares. However, dedicated surveys reported a Welsh breeding population decline of 81% between 1993 and 2006 (Johnstone *et al.* 2007), and the population is now surely well below the estimate of c. 1,100 pairs in 2006. Dedicated surveys in Northern Ireland found 526 pairs in 2013, an 82% decline from 1985–87 (Colhoun *et al.* 2015). These sharp declines are accompanied by range contraction: in the 40 years up to 2007–11, the breeding range in mainland Great Britain declined by 17%, whilst there has been a catastrophic decline of 78% in the breeding range across Ireland as a whole (Balmer *et al.* 2013). The situation in the Republic of Ireland is also deeply troubling; recent surveys suggest that there are not more than 150 breeding pairs (A. Donaghy pers. comm.). Given a previous estimate of 12,000 pairs across the whole of Ireland (Reed 1985), current estimates represent a truly staggering rate of loss. Further range contractions and regional- or even country-level extinctions are now a real possibility for parts of Britain and Ireland over the next decade or so. This long-term decline in breeding numbers exceeds the threshold for Red-listing under Birds of Conservation Concern (BoCC) criteria; it is anticipated that the Curlew will join the Red list when the next BoCC review is published in *British*

Table 1. Global status, population and trend estimates of bird species for which the UK is estimated to support at least 10% of their global breeding population, ordered by magnitude of recent UK decline. Key to global status: LC = Least Concern; NT = Near Threatened (www.iucnredlist.org). UK Trend: n/a = no trend available. For consistency, global population estimates were based on data from www.birdlife.org where available, otherwise Wetlands International (2013) or BirdLife International (2004) as indicated.

Species	Global status	Global breeding population (pairs) ^a	UK breeding population (pairs)	UK population as % of global breeding population	UK breeding population trend
Lesser Black-backed Gull <i>Larus fuscus</i>	LC	312,000–689,000 ^b	110,000	16–35	–48 ^f
Eurasian Curlew <i>Numenius arquata</i>	NT	255,000–355,000 ^c	68,000	19–27	–43 ^g
Shag <i>Phalacrocorax aristotelis</i>	LC	78,000–80,000 ^b	27,000	34–35	–41 ^f
Herring Gull <i>Larus argentatus</i>	LC	906,000–1,555,000 ^b	140,000	9–15	–30 ^f
Meadow Pipit <i>Anthus pratensis</i>	LC	7.4–21.3 million ^c	1.8–2.3 million	8–31	–17 ^g
Moorhen <i>Gallinula chloropus</i>	LC	967,000–2,067,000 ^c	270,000	13–28	–14 ^g
Oystercatcher <i>Haematopus ostralegus</i>	LC	367,000–400,000 ^c	110,000	28–30	–13 ^g
Common Guillemot <i>Uria aalge</i>	LC	6,000,000 ^c	950,000	16	+9 ^f
Stock Dove <i>Columba oenas</i>	LC	567,000–1,000,000 ^c	260,000	26–46	+12 ^g
Razorbill <i>Alca torda</i>	LC	457,000–1,027,000 ^d	130,000	13–28	+13 ^f
Great Skua <i>Stercorarius skua</i>	LC	16,000 ^c	9,600	60	+19 ^f
Dunnock <i>Prunella modularis</i>	LC	12–26 million ^c	2,500,000	10–21	+21 ^g
Northern Gannet <i>Morus bassanus</i>	LC	317,000–400,000 ^c	220,000	55–69	+39 ^h
Wood Pigeon <i>Columba palumbus</i>	LC	10–23.3 million ^c	5.1–5.4 million	22–54	+42 ^g
Greylag Goose <i>Anser anser</i>	LC	333,000–367,000 ^c	46,000	13–14	+203 ^g
Scottish Crossbill <i>Loxia scotica</i>	LC	6,800 ^c	6,800	100	n/a
Manx Shearwater <i>Puffinus puffinus</i>	LC	350,000–390,000 ^c	280,000–320,000	72–91	n/a
Rock Pipit <i>Anthus petrosus</i>	LC	110,000–290,000 ^c	36,000	12–33	stable ^c

Sources

- ^a Where population estimates provided as individuals, breeding pairs were calculated as individuals/3, following BirdLife International (2004)
- ^b Summing biogeographic population estimates in Wetlands International (2015)
- ^c BirdLife International (2015)
- ^d BirdLife International (2004)
- ^e Musgrove *et al.* (2013)
- ^f For the period 2000–13 (JNCC 2014)
- ^g For the period 1995–2012 (Harris *et al.* 2014)
- ^h For the period 1984–85 to 2004–05 (JNCC 2014)

Birds in December 2015.

For one of the most evocative species of our uplands and coasts, and a bird whose haunting song introduced BBC Radio's first natural history programme, *The Naturalist*, in 1946, this is a shocking prospect, and the decline of the Curlew should perhaps concern us more than that of any other breeding bird in the UK. The parlous state of the Curlew is probably also an indicator of the decline in both the extent and the quality of the UK's semi-natural habitats that support breeding Curlews, including upland grassland and moorland and lowland wet grasslands.

Most breeding populations of the Curlew are migratory, with some European breeding birds overwintering as far south as West Africa, where important wintering populations congregate at sites in Guinea-Bissau and Mauritania (Delany *et al.* 2009). However, the bulk of the *N. a. arquata* population winters in northwest Europe, particularly around the coasts of Britain, Ireland, France and the Wadden Sea (Delany *et al.* 2009). The UK is thus of great importance for the species outside the breeding season too. With an estimated wintering population of 150,000 individuals for the period 2004/05–2008/09 (Musgrove *et al.* 2013), considered against a global population estimate of 765,000–1,065,000 individuals (BirdLife International 2015), the UK accounts for 14–20% of the global wintering population. A large proportion of wintering birds congregate at coastal sites, which are generally well protected by the designated site network, at least in Britain, where an ongoing



Dan Brown/RSPB

387. An important site for Curlews is the farmland around Duneaton Water in South Lanarkshire. The valley is within the RSPB's Clyde Valley Wader Initiative, which is working with farmers to conserve breeding waders and their habitats.

review reports that 32.8% of the British and 6% of the all-Ireland wintering populations are within the Special Protection Area (SPA) network (Stroud *et al.* in prep.). In Britain, this proportion of coverage is considered adequate for the species' needs during the non-breeding season, and overwinter survival is estimated to be high in the absence of direct threats such as hunting, which was banned in mainland Britain in 1982 (Taylor & Dodd 2013) and Northern Ireland in 2011. While the wintering population has declined recently (-17% between 2000/01 and 2011/12), the longer-term trend is stable (+3% for the period 1986/87–2011/12)



Toby Wilson/RSPB

388. New woodland plantings, as shown here in South Lanarkshire, sited in existing Curlew breeding areas replace breeding habitat and fragment what remains.

(Austin *et al.* 2014). Furthermore, wintering trends may be complicated by climate-driven range shifts: the wintering distribution of many shorebirds across the UK and north-west Europe, including the Curlew, has shifted to the east, north and northeast in response to increases in mean temperatures (Rehfishch *et al.* 2004; Maclean *et al.* 2008). Yet the fortunes of the breeding population, showing a clear and rapid population decline, are a dramatically different matter.

Why is the Curlew declining?

Curlews need to produce 0.48–0.62 fledglings per pair per year in order for the population to remain stable (Grant *et al.* 1999). However, in over half of European studies that reported fledging estimates, those estimates are below this threshold (fig. 1). Predation of eggs and chicks is typically identified as the most frequent source of low productivity (Berg 1992; Grant 1997; Grant *et al.* 1999; Valkama & Currie 1999). The most influential predator may differ between sites, but various studies have identified key predators, including the Red Fox *Vulpes vulpes*, Hooded *Corvus cornix* and Carrion Crows *C. corone* and/or Lesser Black-backed Gull *Larus fuscus*

(Grant *et al.* 1999), and the Stoat *Mustela erminea*, the last where intensive control by gamekeepers probably rendered other predators (such as the Red Fox) rare (Grant 1997). An experiment on moorland in northern England confirmed that predator control reduced the abundance of Red Foxes and Carrion Crows, and that this led to a greater than threefold increase in Curlew breeding success, and annual increases in breeding numbers (Fletcher *et al.* 2010). Where no predator control occurred, only 15% of Curlew pairs produced young, meaning that each successful pair would need to produce a (highly unlikely) minimum of 3.2 fledglings annually, according to the estimates of Grant *et al.* (1999), to maintain breeding numbers (Fletcher *et al.* 2010). In this context, it is noteworthy that high Curlew densities, higher nesting success and/or stable populations in the UK are often associated with Red Grouse *Lagopus lagopus* management (Tharme *et al.* 2001; Baines *et al.* 2008; Douglas *et al.* 2014). In these areas, intensive production of high grouse densities for driven shooting may benefit other ground-nesting birds, but is associated with a suite of other environmental issues including illegal

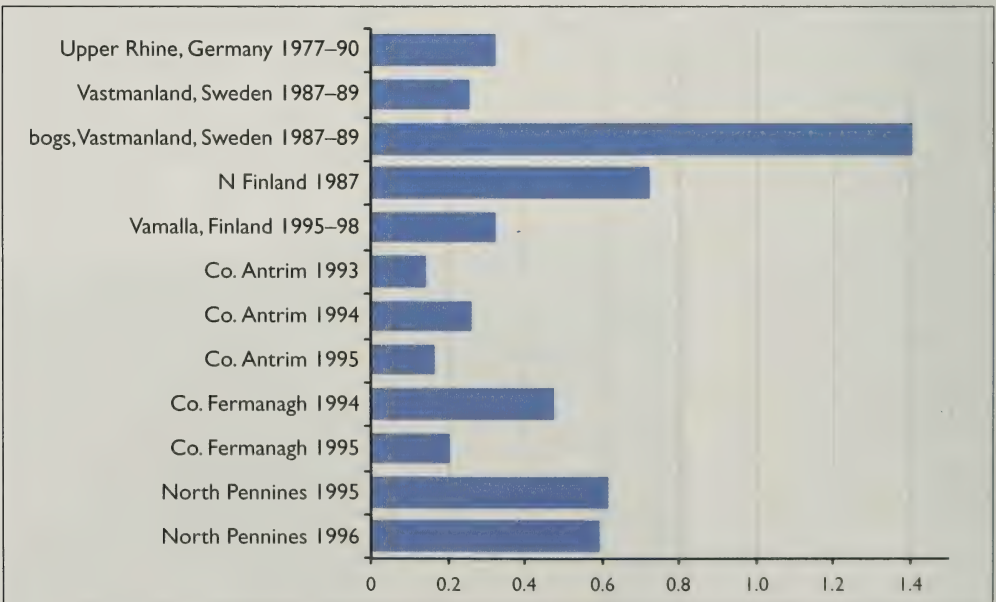


Fig. 1. Estimated Curlew *Numenius arquata* productivity (fledglings per breeding pair) from studies across Europe. Grant *et al.* (1999) estimated that each pair must produce 0.48–0.62 young per year to maintain a stable population. Sources: England (Grant 1997); Northern Ireland (Grant *et al.* 1999); southern Finland (Valkama & Currie 1999); northern Finland (Ylimaunu *et al.* 1987); Sweden (Berg 1992); Upper Rhine (Boschert & Rupp 1993).

killing of birds of prey, peatland damage and culling of Mountain Hares *Lepus timidus* (e.g. Thompson *et al.* 2009).

Predator control may be an effective interim management strategy for improving breeding success of the Curlew. However, the efficacy of predator control as a conservation tool for breeding waders, outside intensive grouse-moor systems, may be variable (Bolton *et al.* 2007) and requires further testing. Furthermore, it is expensive and labour-intensive (Sotherton *et al.* 2009), and there are currently no funding mechanisms for widescale and concerted delivery of this management outside of some protected areas, or where it is privately funded for sporting interests. It may also be necessary to address underlying reasons as to why predation pressure on this species is such a problem, including those that may require a more strategic land-management response. In the UK, the expansion of commercial conifer forests since the mid twentieth century has led to substantial loss and fragmentation of moorland breeding areas. For

example, the habitat of 5,000 pairs of Curlews may have been lost through afforestation in the uplands of southwest Scotland (Ratcliffe 2007). Moreover, there is growing evidence that forests have ‘edge’ effects well beyond their boundaries by supporting populations of generalist predators such as foxes and crows. As a result, greater predation pressure in the remaining open landscape may lead to lower densities and nesting success, and more negative population trends of ground-nesting birds, including the Curlew and other waders, on open ground within a kilometre or more of forest edges (Berg 1992; Valkama *et al.* 1998; Douglas *et al.* 2014; Wilson *et al.* 2014). In southern Finland, for example, nest predation was higher in a fragmented landscape consisting of woodland and farmland, compared with an area of continuous farmland; the study found that 64% and 5% of Curlew nests respectively were predated in the two landscape types (Valkama *et al.* 1999). In the UK, Curlew population changes are inversely related to the area of woodland surrounding breeding sites, and positively related to game-keeper densities; modelling has suggested that increasing woodland cover from 0% to 10% of the land area within 1 km of Curlew breeding sites would require a 50% increase in human predator-control effort to maintain population stability (Douglas *et al.* 2014).

Land use can also have a more direct impact. In the North Pennines, 20–33% of nest failures were attributed to trampling by livestock. Curlews there nested within a variety of marginal agricultural habitats, including wetlands, rough grasslands and



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389. Tagging projects can provide information on the survival rates and movements of local populations, while GPS tracking devices improve our understanding of fine-scale habitat use during the breeding season.



Dan Brown/RSPB



390. A 'bubbling' Curlew on its wintering grounds in north Norfolk, February 2010. Currently, the UK accounts for some 14–20% of the global wintering population.

moorland, but avoided nesting in improved grasslands with a homogenous sward structure lacking in rushes or grass tussocks (Grant 1997). While improved grasslands may provide important foraging opportunities for breeding adults (Robson 1998), the widespread agricultural improvement and homogenisation of agricultural grasslands through drainage, fertilisation, reseeding, high livestock densities and silage management (Vickery *et al.* 2001) suggest that the reduction of habitat quality for breeding Curlews is likely to have been substantial, especially at lower altitudes (Wilson *et al.* 2005). The proliferation of windfarms in the UK uplands also poses an increasing threat; the Curlew is among the more susceptible species to windfarm displacement effects, with breeding birds showing behavioural avoidance up to 800 m from turbines, and breeding bird densities may be reduced by 42% within a 500-m buffer of turbines (Pearce-Higgins *et al.* 2009). Curlew densities may be reduced at windfarms during the construction phase, and there is currently no evidence of recovery to pre-construction levels during operation (Pearce-Higgins *et al.* 2012). These findings are based on correlative analyses and there is a need for much more robust studies to fully quantify the magnitude and likely causes of any windfarm impacts, and assess the effectiveness of mitigation measures.

Conclusions

Based on global conservation status, UK population trends and the global importance of the UK breeding population, the Curlew should currently be considered the UK's highest conservation priority bird species. A comprehensive recovery programme, including the testing of trial management interventions and co-ordinated conservation delivery, in particular beyond driven grouse moors, is needed urgently across the UK. The RSPB is currently working with statutory conservation agencies to this end. Yet delivery opportunities in upland agricultural landscapes, which support a large proportion of breeding Curlews, are at present limited by the poor availability and resourcing of well-targeted and suitably structured management options in agri-environment schemes (Scridel 2014). There is also a pressing need to undertake further research into the impact of windfarms on Curlew populations. The adverse conservation status of the Curlew should also be given greater consideration in planning decisions for windfarms and other developments that may affect the species.

The urgency described in this short paper is real and it is salutary to consider the global status of other members of the genus *Numenius*. The Eskimo Curlew *N. borealis* was one of the most abundant breeding shorebirds in North America but is now almost certainly extinct. The Slender-billed Curlew *N.*

tenuirostris of Eurasia has not been seen since the 1990s and no breeding, passage or wintering populations are known. Both the Far Eastern Curlew *N. madagascariensis*, breeding in eastern Siberia and wintering in Oceania, and the Bristle-thighed Curlew *N. tahitiensis*, which breeds in Alaska and winters on Pacific Islands, are classified as globally Vulnerable on the IUCN Red List (www.iucnredlist.org). The genus *Numenius* is a highly threatened one, and as a global stronghold for the Eurasian Curlew, we must act now in the UK to avoid this species becoming further endangered.

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References

- Austin, G. E., Calbrade, N. A., Mellan, H. J., Musgrove, A. J., Hearn, R. D., Stroud, D. A., Wotton, S. R., & Holt, C. A. 2014. *Waterbirds in the UK 2012/13: The Wetland Bird Survey*. BTO, RSPB and JNCC, in association with WWT, BTO, Thetford.
- Baillie, S. R., Marchant, J. H., Leech, D. I., Massimino, D., Sullivan, M. J. P., Eglington, S. M., Barimore, C., Dadam, D., Downie, I. S., Harris, S. J., Kew, A. J., Newson, S. E., Noble, D. G., Risely, K., & Robinson, R. A. 2014. *BirdTrends 2014: trends in numbers, breeding success and survival for UK breeding birds*. BTO Research Report 662, Thetford. www.bto.org/birdtrends
- Baines, D., Redpath, S., Richardson, M., & Thirgood, S. 2008. The direct and indirect effects of predation by Hen Harriers *Circus cyaneus* on trends in breeding birds on a Scottish grouse moor. *Ibis* 150: 27–36.
- Balmer, D. E., Gillings, S., Caffrey, B. J., Swann, R. L., Downie, I. S., & Fuller, R. J. 2013. *Bird Atlas 2007–11: the breeding and wintering birds of Britain and Ireland*. BTO Books, Thetford.
- Berg, Å. 1992. Factors affecting nest-site choice and reproductive success of Curlews *Numenius arquata* on farmland. *Ibis* 134: 44–51.
- BirdLife International. 2004. *Birds in Europe: population estimates, trends and conservation status*. BirdLife Conservation Series No. 12, Cambridge.
- Bolton, M., Tyler, G., Smith, K., & Bamford, R. 2007. The impact of predator control on Lapwing breeding success on wet grassland nature reserves. *J. Appl. Ecol.* 44: 534–544.
- Boschert, M., & Rupp, J. 1993. Brutbiologie des grossen Brachvogels *Numenius arquata* in einem Brutgebiet am südlichen Oberrhein. *Die Vogelwelt* 5: 199–221.
- Brown, D. J. 2015. Draft International Single Species Action Plan for the Conservation of Eurasian Curlew *Numenius arquata*. AEW Technical Series, Bonn.
- Colhoun, K., Mawhinney, K., & Peach, W. 2015. Population estimates and changes in abundance of breeding waders in Northern Ireland up to 2013. *Bird Study* 62: 394–403.
- Delany, S., Scott, D., Dodman, T., & Stroud, D. 2009. *An Atlas of Wader Populations in Africa and Western Eurasia*. Wetlands International, Wageningen.
- Douglas, D. J. T., Bellamy, P. E., Stephen, L. S., Pearce-Higgins, J. W., Wilson, J. D., & Grant, M. C. 2014. Upland land use predicts population decline in a globally near-threatened wader. *J. Appl. Ecol.* 51: 194–203.
- Engelmoer, M., & Roselaar, C. S. 1998. *Geographical Variation in Waders*. Kluwer, Dordrecht.
- Fletcher, K., Aebischer, N. J., Baines, D., Foster, R., & Hoodless, A. N. 2010. Changes in breeding success and abundance of ground-nesting moorland birds in relation to the experimental deployment of legal predator control. *J. Appl. Ecol.* 47: 263–272.
- Grant, M. C. 1997. Breeding Curlew in the UK: RSPB research and implications for conservation. *RSPB Conservation Review* 11: 67–73.
- , Orsman, C., Easton, J., Lodge, C., Smith, M., Thompson, G., Rodwell, S., & Moore, N. 1999. Breeding success and causes of breeding failure of Curlew *Numenius arquata* in Northern Ireland. *J. Appl. Ecol.* 36: 59–74.
- Hayhow, D. B., Conway, G., Eaton, M. A., Grice, P. V., Hall, C., Holt, C. A., Kueper, A., Noble, D. G., Oppel, S., Risely, K., Stringer, C., Stroud, D. A., Wilkinson, N., & Wotton, S. 2014. *The State of the UK's Birds 2014*. RSPB, BTO, WWT, JNCC, NE, NIEA, NRW and SNH, Sandy, Bedfordshire.
- Harris, S. J., Massimino, D., Newson, S. E., Eaton, M. A., Balmer, D. E., Noble, D. G., Musgrove, A. J., Gillings, S., Procter, D., & Pearce-Higgins, J. W. 2015. *The Breeding Bird Survey 2014*. BTO Research Report 673, Thetford.
- Johnstone, I., Dyda, J., & Lindley, P. 2007. The population status and hatching success of Curlews *Numenius arquata* in Wales in 2006. *Welsh Birds* 5: 78–87.
- Joint Nature Conservation Committee (JNCC). 2014. Seabird Population Trends and Causes of Change: 1986–2013 Report (www.jncc.defra.gov.uk/page-3201), JNCC. [Accessed on 11th December 2014].
- Maclean, I. M. D., Austin, G. E., Rehfish, M. M., Blew, J., Crowe, O., Delany, S., Devos, K., Deceuninck, B., Gunther, K., Laursen, K., van Roonen, M., & Wahl, J. 2008. Climate change causes rapid changes in the distribution and site abundance of birds in winter. *Global Change Biol.* 14: 2489–2500.
- Musgrove, A., Aebischer, N., Eaton, M., Hearn, R., Newson, S., Noble, D., Parsons, M., Risely, K., & Stroud, D. 2013. Population estimates of birds in Great Britain and the United Kingdom. *Brit. Birds* 106: 64–100.
- O'Brien, M. 2004. Estimating the number of farmland waders breeding in the United Kingdom. *International Wader Studies* 14: 135–139.
- Pearce-Higgins, J. W., Stephen, L., Douse, A., & Langston, R. H. W. 2012. Greater impacts of wind farms on bird populations during construction than subsequent operation: results of a multi-site and multi-species analysis. *J. Appl. Ecol.* 49: 386–394.
- , —, Langston, R. H. W., Bainbridge, I. P., & Bullman, R. 2009. The distribution of breeding birds around upland wind farms. *J. Appl. Ecol.* 46: 1323–1331.
- Ratcliffe, D. 2007. *Galloway and the Borders*. Collins New Naturalist, London.
- Reed, T. 1985. Estimates of British breeding wader populations. *Wader Study Group Bulletin* 45: 11–12.
- Rehfish, M. M., Austin, G. E., Freeman, S. N., Armitage, M. J. S., & Burton, N. H. K. 2004. The possible impact

- of climate change on the future distributions and numbers of waders on Britain's non-estuarine coast. *Ibis* 146: 70–81.
- Robson, G. 1998. The breeding ecology of Curlew *Numenius arquata* on North Pennine moorland. Unpublished PhD thesis, University of Sunderland.
- Scridel, D. 2014. Ecology and conservation of birds in uplands and alpine habitats: a report on the BOU's Annual Conference held at the University of Leicester, 1–3 April 2014. *Ibis* 156: 896–900.
- Sotherton, N., May, R., Ewald, J., Fletcher, K., & Newborn, D. 2009. Managing uplands for game and sporting interests: an industry perspective. In: Bonn, A., Allott, T., Hubacek, K., & Stewart, J. (eds.), *Drivers of Environmental Change in Uplands*. Routledge, London.
- Taylor, R. C., & Dodd, S. G. 2013. Negative impacts of hunting and suction-dredging on otherwise high and stable survival rates in Curlew *Numenius arquata*. *Bird Study* 60: 221–228.
- Tharme, A. P., Green, R. E., Baines, D., Bainbridge, I. P., & O'Brien, M. 2001. The effect of management for Red Grouse shooting on the population density of breeding birds on heather-dominated moorland. *J. Appl. Ecol.* 38: 439–457.
- Thompson, P. S., Amar, A., Hoccom, D. G., Knott, J., & Wilson, J. D. 2009. Resolving the conflict between driven grouse shooting and conservation of Hen Harriers. *J. Appl. Ecol.* 46: 950–954.
- Valkama, J., & Currie, D. 1999. Low productivity of Curlews *Numenius arquata* on farmland in southern Finland: causes and consequences. *Ornis Fennica* 76: 65–70.
- , —, & Korpimäki, E. 1999. Differences in the intensity of nest predation in the Curlew *Numenius arquata*: a consequence of land use and predator densities? *Ecoscience* 6: 497–504.
- , Robertson, P., & Currie, D. 1998. Habitat selection by breeding Curlew (*Numenius arquata*) on farmland: the importance of grassland. *Ann. Zool. Fennici* 35: 141–148.
- Vickery, J. A., Tallowin, J. T., Feber, R. E., Asteraki, E. J., Atkinson, P., Fuller, R. J., & Brown, V. 2001. Effects of grassland management on birds and their food resources, with special reference to recent changes in fertilizer, mowing and grazing practices in lowland Britain. *J. Appl. Ecol.* 38: 647–664.
- Wetlands International. 2015. *Waterbird Population Estimates*. 5th edn. <http://wpe.wetlands.org> [Accessed on 24th September 2015].
- Wilson, A. M., Vickery, J. A., Brown, A., Langston, R. H. W., Smallshire, D., Wootton, S., & Vanhinsbergh, D. 2005. Changes in the numbers of breeding waders on lowland wet grasslands in England and Wales between 1982 and 2002. *Bird Study* 52: 55–69.
- Wilson, J. D., Anderson, R., Bailey, S., Chetcuti, J., Cowie, N. R., Hancock, M. H., Quine, C., Russell, N., Stephen, L., & Thompson, D. B. A. 2014. Modelling edge effects of mature forest plantations on peatland waders informs landscape-scale conservation. *J. Appl. Ecol.* 51: 204–213.
- Ylimaunu, O., Ylimaunu, J., Hemminki, O., & Liehu, H. 1987. Breeding ecology and size of the breeding Curlew (*Numenius arquata*) population in Finland. *Lintumies* 22: 98–103. (In Finnish with English summary)

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391. Eurasian Curlews *Numenius arquata* in Cornwall, September 2012.

Chronicle of an extinction?

A review of Slender-billed Curlew records in the Middle East

Guy Kirwan, Richard Porter and Derek Scott



392. The Slender-billed Curlew: Going, going, gone?
(From a photograph of a bird in Yemen in 1984 by Richard Porter, design by Dick Newell.)

The recent removal of Slender-billed Curlew *Numenius tenuirostris* from the British List (BOU 2014; Collinson *et al.* 2014), and widespread internet speculation that the species must already be extinct (even though BirdLife International continues to treat it as Critically Endangered), has prompted us to reconsider some rather older records of the species. As a result, we suggest here that the path to extinction (if indeed this curlew must be deemed no longer extant) may have been incorrectly delineated, a possibility that to some extent was hinted at by Donald *et al.* (2010). Stresemann & Grote (1943) were already showing far greater concern for the species than was usually expressed more than 70 years ago. Yet, perhaps because Stresemann & Grote had

appeared both in German and during wartime, its vital message went unnoticed, and Slender-billed Curlew did not even feature in the first editions of the Red Data Book. Indeed, as recently as 1980, Derek Scott (DAS) and Tony Prater made a recommendation that the species be listed as globally threatened – but to no avail. It seems staggering that no fewer than 15 birds were hunted between 1962 and 1987, one year prior to the species' admission to the Red Data List (Donald *et al.* 2010) – two of the 15 for scientific institutions, and representing additional pressure on a species that was already on the brink while the world blinked.

This is not the place to provide a detailed résumé of historical knowledge of the Slender-billed Curlew (keynote works such

as Gretton 1991 have already provided this), but a few salient facts should be mentioned. The species was only ever confirmed to breed at two locations: near Tara, north of Omsk, and at Lake Chany, east of Omsk, in south-west Siberia, Russia, between 1909 and 1925 (Dresser 1909; Gretton *et al.* 2002; McGhie 2002), although see comments under Iran below. Unlike the equally ill-fated Eskimo Curlew *N. borealis* of the Americas, which performed a long, looping north–south migration, the Slender-billed Curlew migrated west-southwest from Siberia via central and eastern Europe, especially Ukraine, Bulgaria, Hungary, Romania and the former Yugoslavia, to wintering areas in southern Europe (Greece, Italy) and Turkey, as well as North Africa (Algeria, Morocco and Tunisia), with additional reports from as far afield as Turkmenistan, Saudi Arabia, Yemen and France (Vangeluwe *et al.* 1998). It is even possible that the species regularly wintered in parts of the Netherlands (Donald *et al.* 2010). However, two published records from

Seychelles must be regarded as unproven (Skerrett 2011), while specimen records from Myanmar and Montenegro have recently been shown to be a misidentified Eurasian Curlew and Whimbrel, respectively (Mlíkovský 2004). Mlíkovský also demonstrated that none of the available records in the literature (five) from the Czech Republic stand up to modern scrutiny. We note, but make no comment on, two specimens taken in Japan c. 1913 (Brazil 1991) and one record in Canada c. 1925 (Beardslee & Mitchell 1965).

Among the last well-documented sightings were those in winter 1997/98 at Merja Zerga, in Morocco (Thévenot *et al.* 2003). The species was virtually annual at this site, in very small numbers, between 1986 and early 1995, with a maximum of five in winter 1986/87. In terms of other sightings after the last at Merja Zerga, one was photographed on Sicily in late March 1996 (Corso 1996); there was an observation of two birds in Oman in February 1999 (Eriksen & Victor



Fig. 1. Map showing accepted Middle Eastern records of Slender-billed Curlews *Numenius tenuirostris*, either by this paper or by national records committees; note that all of the listed records from Cyprus and Oman are currently under review. Two of the Turkish specimens are not listed, as no definite localities are known for either (see main text).

2013) – not three in August of that year, as stated by Donald *et al.* (2010); and a record from Apaj Pusztá, in Kiskunság National Park, Hungary, in April 2001. The last record was initially rejected but then accepted by the national records committee (Oláh & Pigniczki 2010); full details are available at http://sakertour.com/slender-billed_curlew.php. This is reckoned to be the last sighting anywhere in the world with any degree of authenticity, although Donald *et al.* (2010) listed a number of possible records since, including one from Gujarat, India, in March 2002. There was also an astonishing series of accepted records in Greece during the latter half of the 1990s (per BirdLife International/RSPB database): in January–March 1997 (one, Evros Delta, Thraki); April 1997 (one, Axios Delta, Macedonia; two, Sagiada, Ipiros); April 1998 (three, south of Lake Ismarida, Thraki; two, Porto Lagos, Thraki); May 1998 (one, Agiasma Lagoon, Macedonia); April 1999 (four, Evros Delta); and May 1999 (one, Mesolonghi, Sterea Hellas). We urge the relevant body to reconsider these records in light of recent findings. Dedicated surveys for the species (e.g. Azafzaf *et al.* 2007, Ahmed 2012, Crockford & Buchanan in prep.) have failed to produce a single authenticated record since 2001.

One of the recommendations made by Corso *et al.* (2014), following a review of the species' identification characters, was that old records of Slender-billed Curlew should be reviewed. Prior to this, Guy Kirwan (GMK) and Richard Porter (RFP) had already been discussing the possible authenticity of the Turkish sight records (including RFP's own published sightings), and had realised that none of them would stand up to the scrutiny of modern-day standards. With the publication of Corso *et al.* (2014), we decided to widen our review to the entire Middle East, as defined by Porter & Aspinall (2010): Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates and Yemen. We discuss all claims of Slender-billed Curlew held in the extensive database maintained by BirdLife International/RSPB.

In undertaking this review we have accepted the decisions of the country bird records committees, where they are estab-

lished. We have not acted as 'judge and jury', except for Iran, Iraq, Turkey and Yemen, because of our own considerable involvement in these countries, most of which lack a formal records committee. Where we consider that a records committee should review its records of Slender-billed Curlews, we have stated this under the country accounts. We have not included Egypt, for which the RSPB database holds ten records (see also Goodman & Meininger 1989), but we recommend that these are reviewed by the Egyptian Ornithological Rarities Committee. Nor have we included Djibouti, although again we recommend that the 1977 claim in the BirdLife/RSPB database is critically examined.

Bahrain

No records; Slender-billed Curlew has never been claimed in this country (Nightingale & Hill 1993; Hirschfeld 1995).

Cyprus

Three records are mentioned in Flint & Stewart (1992), but there have been no claims since (C. Richardson pers. comm.). The records are: one in Famagusta Harbour on 23rd April 1958; two near Nicosia on 22nd December 1964; and one at Cape Andreas on 28th April 1972 (fig. 1). These records are being reviewed by the Cyprus Bird Records Sub-committee (C. Richardson pers. comm.). (Note: Porter & Aspinall (2010) incorrectly omitted Slender-billed Curlew as a vagrant for Cyprus.)

Iran

Perhaps only three definite records, comprising two specimens (one of which cannot be traced) and one sight record, largely in agreement with the conclusions of Roselaar & Aliabadian (2009). The earliest reports were by N. A. Zarudny, who reported small numbers at lakes in the northwest of the Seistan Basin on 7th–16th June 1896, and several in meadows at Hosein-Abad near Zabol, Seistan, on 14th June 1896 (Zarudny 1900). On another visit on 23rd May–16th June 1898, he reported the species breeding in small numbers in meadows abutting the eastern and northern marshes, and on 2nd October 1898 he stated that he encountered

it at Pir Mohammad Marshes, east of Zabol (Zarudny 1903). However, Zarudny seems to have obtained just one specimen in Iran, a migrant female on 29th April 1898, at Mozhnabad in Khorasan-e Razavi Province, c. 350 km north of the Seistan Basin (Zarudny 1903; fig. 1). Although the BirdLife/RSPB database states that this specimen is held at the Zoological Institute, Russian Academy of Sciences, St Petersburg (ZISP), its whereabouts is currently unknown; it is not held in any of the following collections, all of which harbour other specimens taken by Zarudny: Berlin, New York (AMNH), St Petersburg and Tashkent. Zarudny's records from the Seistan Basin in 1896 and 1898 have been widely accepted, but his assertion that the species bred is impossible to prove and questions the validity of his sight records of the species – although Zarudny had experience with the species elsewhere, namely in Orenburg Oblast in southwest Siberia, west and slightly further south than the Omsk region, where he collected specimens in 1883 (ZISP), early August 1887 (female, AMNH 738209), 1888 (two, ZISP) and Tashkent (now Uzbekistan) in 1889.

In their review of rare birds in Iran between the 1860s and 1960s, Roselaar & Aliabadian (2009) accepted Zarudny's records, but considered only two records in the twentieth century to be reliable (fig. 1): a male

collected by W. Koelz at Bandar Abbas, Hormozgan Province, on 20th December 1939 (FMNH Chicago 421184; plate 393); and one seen by P. J. K. Burton at Bandar-e Gaz on the south side of Gorgan Bay, Mazandaran Province, on 23rd and 27th August 1963 (Feeny *et al.* 1968). The brief description in Feeny *et al.* is convincing and the observer was obviously aware of his observation's significance. Roselaar & Aliabadian (2009) were unconvinced by the report of a bird at Ghazian, near Bandar Anzali, Gilan Province, on 2nd March 1927 ('observed curlew, pale, thus *tenuirostris*'), by Heinrich (1928), which was not mentioned by Stresemann (1928) in the full report of the 1927 expedition, suggesting that even then there was considerable doubt attached to the record. Roselaar & Aliabadian (2009) also cast doubt on records by Éard & Etchécopar (1970) of three on mudflats near Bandar Abbas, Hormozgan Province, on 25th April 1967 and seven there on 30th April 1967. Éard & Etchécopar (1970) appeared to have been unaware of the significance of their observations, stating simply that 'Ce Courlis fut observé sur les vasières et la sansouire littorale à Bandarabass: 3 le 25 avril, 7 le 30', and provided no further details.

In his review of rare birds in Iran between 1967 and 1978, Scott (2008) included the two records by Éard & Etchécopar, and noted

that none was recorded in the 1970s, despite numerous surveys of suitable habitat throughout the country during spring, autumn and midwinter. Gretton (1991), however, listed two records from Iran in the 1970s: one at Guluga (Galugah), near Bandar Anzali, Gilan Province, on 11th April 1970 (attributed to R. E. Scott); and a bird near Ramsar, Mazan-

John Bates/Field Museum of Natural History, Chicago



393. Male Slender-billed Curlew *Numenius tenuirostris* (FMNH 421184), collected at Bandar Abbas, Hormozgan Province, Iran, December 1939.

darán Province, on 29th April 1973 (G. Groh). Both records were dismissed by Scott (2008). The Guluga bird was reported by a group of nine British birdwatchers who spent three weeks studying bird migration in Gilan Province in April 1970. In a letter to DAS dated 13th January 1975, P. W. Burness wrote that the bird was seen by only two observers and that there was some dispute over the identification. He suggested that the record be rejected. The 1973 record was presumably withdrawn by the observer himself as, in a letter to DAS dated 10th October 1977, Günter Groh summarised his records in Iran in April–May 1973, but made no mention of Slender-billed Curlew.

During the 1980s and 1990s, there were no fewer than 76 reports, 31 in the 1980s and 45 in the 1990s. The 1980s reports were summarised in Gretton (1991); all were by a single observer, B. Behrouzi-Rad, at two localities: Miankaleh Wildlife Refuge, Mazandaran Province, in the southeast Caspian; and the Mehran Delta, Hormozgan Province, in the southern Persian Gulf. At Miankaleh Wildlife Refuge, there were up to three individuals in spring and six in autumn; in the Mehran Delta, there were up to eight in spring, 12 in autumn and 12 in winter. Most of the 45 records in the 1990s were obtained during midwinter waterbird counts in January and came from 22 sites, mostly in the southeast Caspian (five) and along the Persian Gulf coast (11), but also from two sites in central Fars Province, three in Persian Baluchistan and one in Khuzestan Province. The highest single count was 28, at Dasht-e Arjan in central Fars on 10th January 1991, but there were counts of 20 at Miankaleh Wildlife Refuge on 13th January 1992 and 20th January 1996, and at Fereidoon Kenar Ab-bandans, Mazandaran Province, on 19th January 1998, and eight counts of 10–18 individuals. Twenty-two of the 25 counts between 1990 and 1995 were by B. Behrouzi-Rad and 19 of the 20 records in 1996–99 are unattributed records in the Iran Department of Environment's waterbird census database. Of the four remaining records, three were by Jamshid Mansouri and one is unattributed. In recent correspondence with DAS, Mansouri has withdrawn his records, although he remains reasonably sure that the two birds he

saw in Nayband Bay in Bushehr Province on 10th January 1998 were this species, since 'they had no stripe on head, with a little darker spots on their flanks, and probably smaller than Whimbrel [*N. phaeopus*]'.

Many of the midwinter records of Slender-billed Curlews in Iran in the late 1980s and early 1990s were published by IWRB (later Wetlands International) in the results of the International Waterbird Census (IWC) in southwest Asia, but usually with the caveat that they were unconfirmed. Thus, although Perennou *et al.* (1994) provisionally accepted the records from Iran, they noted that 'the recent records from Iran, some of which relate to quite large flocks, have yet to be confirmed'. As no confirmation was forthcoming, Delany *et al.* (1999) and Gilissen *et al.* (2002) excluded the Iranian counts of Slender-billed Curlews from their IWC reports in 1995–99. In the latest review of rare birds in Iran, covering 1980–2010, Khaleghizadeh *et al.* (2011) accepted only those records supported by a detailed description and/or an identifiable photograph. Given that there was no such documentation for any of the 76 Slender-billed Curlew records in the 1980s and 1990s, they were considered unacceptable.

Nevertheless, the numerous reports of the species in Iran in the late twentieth century aroused considerable interest, and several surveys were conducted in the early 2000s with a view to confirming the records and identifying key sites. In particular, waterbird experts from WIWO (Working Group for International Waterbird and Wetland Research) in the Netherlands collaborated with the Iranian Department of Environment in dedicated surveys at wetlands in southern Iran in January–February 2000 (van der Have *et al.* 2001, 2002) and January 2002 (Willems *et al.* 2002). Although much potentially suitable habitat was located along the Persian Gulf coast, no Slender-billed Curlews were observed. Teams from WIWO participated in the midwinter waterbird counts in all major wetland regions in Iran in 2004, 2005, 2007 and 2009, but again failed to find the species (de Boer *et al.* 2004; van Diek *et al.* 2004; Amini & Willems 2008; Amini & van Roomen 2009), and since then, several experienced Iranian ornithologists have con-

tinued the search without success (H. Amini, A. Ashoori, S. Sadeghi Zadegan and M. Tohidifar pers. comm.). By the late 2000s, it was becoming clear that if there really had been a small wintering population in Iran in the 1980s and 1990s, the birds had since disappeared. However, there are several reasons for believing that most if not all of the records of Slender-billed Curlews in Iran in the 1980s and 1990s were misidentified Eurasian Curlews *N. arquata* or Whimbrels. Only two specimens of the species have been obtained in Iran (see above), despite considerable collecting work in the late nineteenth century and the first half of the twentieth. Extensive surveys at wetlands throughout Iran in the late 1960s and 1970s failed to find the species, and none has been seen since 2000 despite numerous dedicated surveys by experienced observers. Eighteen of the Slender-billed Curlew records in the 1980s and 1990s were from Miankaleh Wildlife Refuge, eight in spring, six in autumn and four in midwinter, and all but four involved multiple individuals including some quite sizeable flocks, yet this refuge was one of the most intensively studied wetlands in Iran in the 1970s, with compre-

hensive waterbird counts on more than 40 occasions between October 1970 and March 1976, in every month of the year except June (DAS participated in 36 of these). It seems inconceivable that a species which was reported fairly regularly in the 1980s and 1990s could have been completely overlooked in the 1970s. Finally, it is worth noting that there is a considerable amount of variation in the body size, length and shape of bill, and general coloration of Eurasian Curlews occurring in Iran, with large, pale and long-billed birds (*N. a. orientalis*) occurring alongside smaller, darker and shorter-billed birds (resembling nominate *arquata*), and birds with intermediate characteristics.

The most recent Iranian record in the BirdLife/RSPB database is a report mentioned by Hornman & van Diek (2004), who visited the island of Ghabreh Nakhoda in Khor Musa, Khuzestan Province, in January 2004, and noted that three Slender-billed Curlews 'were observed a few years ago'. These were almost certainly those reported by B. Behrouzi-Rad at Khor Musa in February 2001. At least one of the birds was video-recorded by a member of Behrouzi-

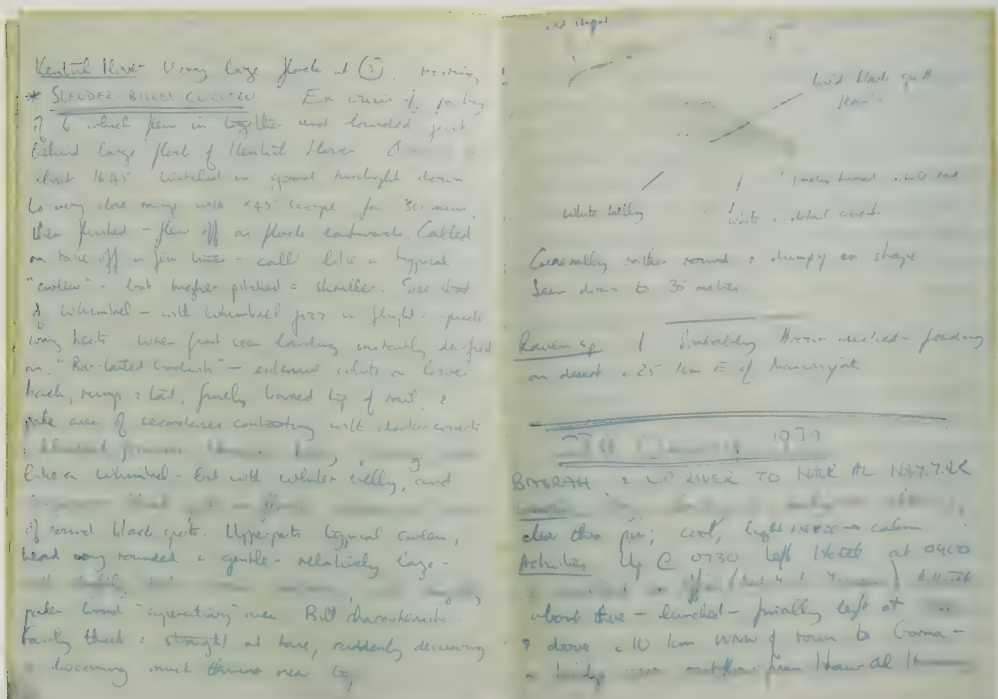


Fig. 2. Copy of Derek Scott's field notes describing his record of Slender-billed Curlew *Numenius tenuirostris* in Iraq in January 1979.

Rad's team, and a copy of the footage has been seen by all three authors. Several curlews appear in the video, including a dead bird, but all appear to be Eurasian Curlews. A report in the Iran Department of Environment's database of seven Slender-billed Curlews in Miankaleh Wildlife Refuge, Mazandaran Province, on 6th February 2003 was dismissed by Meininger & Zekhuis (2004), who concluded that the birds were probably Whimbrels.

We believe that over the last 100 years at least, Slender-billed Curlew has been very rare in Iran and perhaps no more than a vagrant. It is possible that the small numbers observed by Zarudny in the Seistan

Basin in southeastern Iran in 1896 and 1898 were summering non-breeders, but the possibility that Zarudny misidentified the birds cannot be eliminated. Most (if not all) records in the 1980s and 1990s can be ignored; it is conceivable that some were Slender-billed Curlews, but without detailed descriptions, they can be considered possible at best. The last fully convincing record in Iran is that by P. J. K. Burton in 1963.

Iraq

Two records (fig. 1). According to Ticehurst *et al.* (1921–22), 'Buxton saw many on 16th December 1917 in a temporary winter lake in a hollow in the bare desert ten miles north of Amara and secured a specimen.' The specimen, a first-year female, is at the Natural History Museum (NHM), Tring (NHMUK 1933.2.16.5; plate 394). DAS & E. Carp saw a



394. Ventral and dorsal views of female Slender-billed Curlew *Numenius tenuirostris* specimens from Israel (NHMUK 1918.1.10.1, upper specimen) and Iraq (NHMUK 1933.2.16.5), collected in October 1917 and December 1917, respectively.

party of six on the southern shore of Haur Al Hammar, near Nasiriya, on 27th January 1979 (Scott & Carp 1982), and provided supporting evidence in the form of original field notes and a sketch (fig. 2). There is one unconfirmed record: T. Grochowski reported a single at Haur Al Hammar in autumn 1979 (Gretton 1991). According to Allouse (1961), H. J. Moore observed birds that he believed to be this species at Hawr Shubaicha on 15th September 1943 and 22nd October 1943. However, Moore & Boswell (1956) make no mention of these sightings in the account of their observations in Iraq in 1941–45.

Israel

One accepted record (fig. 1), a female shot at Nahal Besor, near Tel Sharehen, on 4th October 1917. The skin is at the NHM, Tring (NHMUK 1918.1.10.1; plate 394). Two other

Hein van Grouw © Natural History Museum, London

records (singles at Birket-Ala' [Biq'at Man] on 4th April 1943 and at Eilat on 12th April 1977) were not supported by corroborating evidence (Shirihai 1996).

Jordan

No accepted records. A claim of a single at Azraq on 4th May 1965 was not accepted by the Jordan Birds Records Committee (I. J. Andrews pers. comm.).

Kuwait

No accepted records. A report of five birds in Kuwait Bay on 12th January 1967 (Gregory 2005) was rejected following a review by the Kuwait Ornithological Rarities Committee. While the claim certainly does not meet the detailed standards required today for acceptance, it is perhaps worth stating that the published description is compatible with Slender-billed Curlew.

Lebanon

No records, and the species has never been claimed in Lebanon (Ramadan-Jaradi & Ramadan-Jaradi 1999; Ramadan-Jaradi *et al.* 2008).

Oman

Five records are cited in Eriksen & Victor (2013): one at As Seeb/Awamir on 25th and 28th April and 19th May 1976; one on Abb Island on 5th January 1990; one at Filim on 6th January 1990; one at the southeast corner of Bar Al Hikman on 8th January 1990; and two at Khawr Dhurf on 10th February 1999 (fig. 1). These are under review by the Oman Bird Records Committee (J. Eriksen pers. comm.). The 1999 record, if it remains accepted, will be to our knowledge the last to be recorded in the Middle East. Descriptions of the 1976 records were published in Walker (1981); unfortunately, while the available information is compatible with the species, no mention is made of the shape or size of the bill, leg colour or shape of spotting on the lower breast and flanks. No details have (to date) been received by the OBRC of a bird reported at Bar Al Hikman on 10th April 2014 (*Sandgrouse* 36: 263); we believe that wholly undocumented claims of Slender-billed Curlew should not be published in future.

Qatar

No records, and the species has never been claimed in Qatar (Jamie Buchan and Neil Morris pers. comm., Qatar Bird Records Committee).

Saudi Arabia

No accepted records. The only claim is of a single at Jizan on 19th January 1990 (P. Symens). We have not been able to discover any further details and, in the absence of a description or examination by any records committee, we recommend that this record be treated as a possible only.

Syria

No records, and the species has never been claimed in Syria (Murdoch & Betton 2008).

Turkey

Six specimen records, none later than the early twentieth century; and many sight records but none proven (e.g. with photographs) and even written details are now lacking for most (see below). Kirwan *et al.* (2008), drawing in part on Gretton (1991) and the BirdLife/RSPB database, which in turn were largely based on the Turkey Bird Reports, listed a total of 28 reports that were considered acceptable. Of the records accepted by the Turkey Bird Reports, most (19 of the 28) were pre-1975 (and of those 19, 15 were post-1966) and all (of those with precise dates) fell between 10th July and 12th May, although none was seen in November or February. The following is a chronological breakdown of all dated records: July 1, August 3, September 3, October 1, December 5, January 4, March 5, April 5, May 1. However, the only real documentation that exists is the six specimens, two each at: NHM, Tring (Sharpe 1896; Corso *et al.* 2015); Robert's College, Istanbul (Kirwan 1997); and the National Museum of Natural History, Sofia (Boev 2003). All six have been examined by GMK. Two of the 15 records made between 1967 and 1974 involved RFP, together with other observers (see below).

Specimen records (fig. 1) are as follows: two at NHM, Tring – male taken at Ismid (= Izmit, 40°46'N 29°55'E), just east of Istanbul, on 1st April 1867 by Thomas Robson, subsequently in the collection of

Henry Seebohm (NHMUK 1892.8.3.452), and immature female, taken at Kartal (= Kartal, 41°07'N 28°03'E), now part of Istanbul, on the Asian side of the Bosphorus, on 19th December 1867 by Thomas Robson and acquired by NHM, Tring, via the Godman & Salvin collection (NHMUK 1879.4.5.1318); two specimens, presumably taken in the environs of Istanbul in the late nineteenth or early twentieth century, held in the Robert's College, Istanbul (nos. 142–143; Kirwan 1997); and two specimens at NMNH, Sofia (NMNHS) – an adult female taken at Istanbul in December 1892 (NMNHS 408) and another female taken at Makriköy, 10 km west of Istanbul, on 11th September 1895 (NMNHS 2773), both from the A. Alléon collection (Boev 2003).

The following sight records (all singles unless stated otherwise) were accepted by Kirwan *et al.* (2008): Hoyran Gölü (Mediterranean), 14th January 1967; two at Mogan Gölü (Inner Anatolia) on 14th January 1967, two there on 19th March and one on 23rd March 1967; two at Balıkdami (Inner Anatolia), 26th March 1967; Sodalı Gölü (East Anatolia), 12th August 1967; Amik Gölü (Mediterranean), 10th October 1968; three near Tekirdağ (Marmara), 5th April 1969; two moving west past Side, Antalya Province (Mediterranean), 15th April 1969; Seyfe Gölü (Inner Anatolia), 12th December 1969; near Yarma (Inner Anatolia), 28th April 1970; Eber Gölü, 12th May 1970; Çivril Gölü (Mediterranean), 17th January 1971; near Rize (Black Sea Coastlands), 25th August 1971; Göksu Delta (Mediterranean), 28th August 1973; two at Uluabat Gölü (Marmara), 30th September 1973; Küçük Menderes Delta (Aegean), 23rd September 1979; Akyatan Gölü, Çukurova (Mediterranean), 5th January 1982 and 4th March 1985; four at Göksu Delta, 9th March 1985; Ereğli Marshes (Inner Anatolia), 6th April 1986; Göksu Delta, 10th July 1986; and Büyük Menderes Delta (Aegean), 26th December 1986.

While it is likely that some of these records do relate to Slender-billed Curlews, the original descriptions of the birds that appeared in the first five Turkey Bird Reports were destroyed many years ago, and so it has not been possible to reappraise them in the

light of modern-day standards. Indeed, the only details now available for any of the pre-1980s records were published by RFP and relate to his own observations, in October 1968 and April 1970 (Porter 2004); and he now believes that these cannot be considered anything more than probable. What details we do possess for any of the other records do not provide convincing evidence for their continued acceptance, but we urge observers of any of the above-mentioned sightings to resubmit the original documentation to us, especially if they feel that the records could be upheld as a result. In hindsight, the loss of a substantial part of the Turkey Bird Report archive (which has implications for the records of other species too) should have been made clear in Kirwan *et al.* (2008).

Gretton (1991) listed three records involving four individuals from Büyükçekmece, just west of Istanbul, in 1946, 1947 and 1951, and another from the Meriç Delta (Thrace) involving two birds on 27th February 1959 (Kumerloeve 1970), which are unacceptable (see discussion in Kumerloeve 1961, Kirwan 1997) and were in part accepted by Gretton through misreading German texts. Additionally, records of singles in Çukurova on 30th April 1986, at Dalyan Delta (Aegean) on 22nd August 1990 and Kulu Gölü (Inner Anatolia) on 10th May 1993 cannot be regarded as certain, while one at Tuzla, just southeast of Istanbul (Marmara), on 15th September 1985 was proven to be a Eurasian Curlew *N. a. orientalis* by Konrad (1994).

United Arab Emirates

No accepted records. Neither of two claims now stands following a review by the Emirates Bird Records Committee (O. Campbell *in litt.*): one observed by J. Stewart-Smith on 21st September 1972 at Abu Dhabi sewage ponds was subsequently withdrawn by the observer (who felt that, given the extreme rarity of the species and the high standards expected today, he could no longer support the observation), while a claim of four at Al Ghar (Wathba) Lake on 14th November 1997 was rejected by the EBRC.

Yemen

One record (fig. 1). The only accepted record



395. Slender-billed Curlew *Numenius tenuirostris* (left), with Eurasian Curlew *N. arquata*, Hodeidah sewage lagoons, Yemen, January 1984.

is of a single, probably a female based on bill length, photographed at Hodeidah sewage lagoons on 1st–2nd January 1984 (Porter 2004; plate 395). Two other claims (Al Kwakhah, 7th October 1988, and Al Mokha, 6th October 1988) were found unacceptable because of insufficient evidence.

Discussion

A number of facts have informed our suggestion that most, if not all, of the sight-only records of Slender-billed Curlew discussed here should now be considered doubtful.

First, recent experience in the UK has demonstrated that identification of Slender-billed Curlew is not as straightforward as it was once assumed (Collinson *et al.* 2014; Corso *et al.* 2014).

Second, optical equipment in the 1960s and early 1970s was greatly inferior to that available now; and even with the improvements in both optics and knowledge of identification criteria, other factors must be considered, not least that not all observers visiting countries other than their own tend to be as rigorous as they might otherwise be (see Robertson 2000).

Third, the status of the Whimbrel as a regular passage migrant in Turkey, albeit in comparatively small numbers, with occasional winter records, has been established only recently (Kirwan *et al.* 2008). Even in the early 1990s, Kasperek (1990) was suggesting that some historical records of Whimbrel might in fact have involved

Slender-billed Curlew. In fact, the reverse is far more likely to have been true. It is of course unsurprising that there is substantial overlap in phenology between records of the two species in Turkey (Kirwan *et al.* 2008).

Fourth, it is surely remarkable how few specimens of Slender-billed Curlew are available from Turkey: collectors such as Krüper obtained none around Izmir, even though there was probably plenty of suitable habitat in the city's environs in the 1870s. Later, Kumerloeve failed to record the species in Turkey with certainty, despite spending much time there, initially in the 1930s and then again between 1953 and the late 1960s.

Fifth, the identification problem posed by Eurasian Curlew of the race *suschkini*, which breeds from the lower Volga east to southwest Siberia and northern Kazakhstan, and winters in coastal sub-Saharan Africa and southwest Asia, has only recently been appreciated (Engelmoer & Roselaar 1998).

Finally, although scarcely provable, it is our opinion that many observers visiting both Greece and Turkey (and North Africa), even as recently as the early 1980s, would have been under the misapprehension that they might almost 'expect' to encounter Slender-billed Curlews, especially in spring or autumn, in large part due to the fact that the species was listed as being globally threatened only recently. (This also causes considerable problems for subsequent record assessment, especially ones such as this, many years later, because the lack of awareness of a

species' rarity made observers even less likely to attempt to document their records in situ.) For example, Goutner & Handrinos (1990) listed 65 sight records, involving c. 570 or 572 individuals, for Greece between 1962 and 1988, with two of those records (in October 1978 and April 1981) involving flocks of c. 150 and c. 250 birds, respectively. In hindsight, such claims clearly border on the fanciful, but are symptomatic of the lack of realisation, even comparatively 'late in the day' as to just how rare the Slender-billed Curlew had become by this time. Even more recently, Nankinov (1994) claimed that Bulgaria was a critically important stopover region for the species, with 52 records involving 378 individuals between 1869 and 1993 (although it is unclear how many of those 'records' are documented – the national museum in Sofia houses just four specimens, none collected later than 1899; Boev 2003); while Serra *et al.* (1995), reporting a now-discredited observation of 19 individuals in Sicily in early 1995, described the presence of Slender-billed Curlews at the site as 'not really that surprising, but the relatively high number of birds involved certainly was unexpected'. In 1995, again with hindsight, Slender-billed Curlew was perilously close to the verge of extinction, which should have made any observation 'surprising' and indeed remarkable.

If, as we suggest, many of the published records from the Middle East, especially those from Iran and Turkey, are either unquestionably erroneous or, at least, might not survive modern levels of scrutiny, this may dramatically change how we view the chronology of the species' decline towards potential extinction. Furthermore, as already noted by Gretton *et al.* (2002) and Donald *et al.* (2010), there is other evidence (for example from the only confirmed breeding area) that the species had become very rare well before the last third of the twentieth century. We admit that some of the ideas expressed here are unproven hypotheses, but we do strongly believe that many Middle Eastern records either cannot be substantiated or should be carefully re-evaluated by the appropriate bodies, and that the Slender-billed Curlew was almost certainly considerably rarer than was generally appreciated

three to four decades ago.

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References

- Ahmed, R. 2012. Slender-billed Curlew survey in Saudi Arabia January 2011. *Phoenix* 28: 24.
- Allouse, B. E. 1961. *Birds of Iraq*. Vol. II. Al-Rabita Press, Baghdad. (In Arabic)
- Amini, H., & van Roemen, M. (eds.) 2009. Waterbirds in Iran, January 2009. Results of a mid-winter count in the provinces of Gilan, Mazandaran, Golestan, Fars, Khuzestan, Bushehr, Hormozgan & Sistan-Baluchistan. Dept of Environment, Islamic Republic of Iran & Foundation Working Group International Waterbird and Wetland Research, Tehran.
- & Willems, F. J. (eds.) 2008. Waterbirds in Iran 2007. Results of a mid-winter count in the provinces of West Azarbayjan, Gilan, Mazandaran, Golestan, Sistan-Baluchistan, Hormozgan, Fars, Bushehr & Khuzestan of the Islamic Republic of Iran, January 2007. Dept of Environment, Tehran.
- Azafzaf, H., Gretton, A., Kiss, J. B., Smart, M., Zenatello, M., & Feltrup-Azafzaf, C. 2007. Search for the Slender-billed Curlew (*Numenius tenuirostris*) in Tunisia in January 2003. *Ostrich* 78: 505.
- Beardslee, C. S., & Mitchell, H. D. 1965. Birds of the Niagara frontier region: an annotated check-list. *Bulletin of the Buffalo Society of Natural Sciences*. Vol. 22. Buffalo, New York.
- de Boer, P., van Straaten, M., Meininger, P. L., Zekhuis, M., Hornman, M., van Diek, H., Willems, F., Felix, R., van Winden, E., & Oosterbaan, B. (eds.) 2004. Waterbirds in Iran: results of a mid-winter count in the provinces of Gilan, Mazandaran, Khuzestan, Hormuzgan and Sistan-Baluchistan, January 2004. Internal report to Dept of Environment, Tehran.
- Boev, Z. 2003. Specimens of extinct and threatened birds in the collections of the National Museum of Natural History in Sofia, Bulgaria. *Bull. Brit. Orn. Club Suppl.* 123A: 234–245.
- Brazil, M. 1991. *Birds of Japan*. Helm, London.
- British Ornithologists' Union (BOU). 2014. Records Committee: 42nd Report (October 2013). *Ibis* 156: 236–242.
- Collinson, J. M., Rowlands, A., Steele, J. G., McInerney, C. J., & Hudson, N. 2014. The review of the record of Slender-billed Curlew at Druridge Bay,

Chris Gomersall



Michel Brosselin



396 & 397. Two of the classic images of the relatively rarely photographed Slender-billed Curlew *Numenius tenuirostris*: at Merja Zerga, Morocco, in February 1995, and (with Eurasian Curlews *N. arquata*) in Brittany, France, in February 1968.

- Northumberland. *Brit. Birds* 107: 389–404.
- Corso, A. 1996. Slender-billed Curlew on Sicily in March 1996. *Dutch Birding* 18: 302.
- , Jansen, J. J. F. J., & Kókay, S. 2014. A review of the identification criteria and variability of the Slender-billed Curlew. *Brit. Birds* 107: 339–370.
- , —, & Kirwan, G. M. 2015. Two overlooked specimens of Slender-billed Curlew *Numenius tenuirostris* from Turkey. *Sandgrouse* 37: 25.
- Crockford, N. J., & Buchanan, G. M. In prep. Ancillary benefits of searching for high-profile species using volunteer surveys: the example of the 'lost' Slender-billed Curlew *Numenius tenuirostris*.
- Delany, S., Reyes, C., Hubert, E., Pihl, S., Rees, E., Haanstra, L., & van Strien, A. 1999. *Results from the International Waterbird Census in the Western Palearctic and Southwest Asia, 1995 and 1996*. Wetlands International Publication No. 54. Wetlands International, Wageningen.
- van Diek, H., Felix, R., Hornman, M., Meininger, P., Willems, F., & Zekhuis, M. 2004. Bird counting in Iran in January 2004. *Dutch Birding* 26: 287–296.
- Donald, P. F., Collar, N. J., Marsden, S. J., & Pain, D. J. 2010. *Facing Extinction: the world's rarest birds and the race to save them*. Poyser, London.
- Dresser, H. E. 1909. Exhibition of eggs of the Slender-billed Curlew (*Numenius tenuirostris*), the Siberian form of the Common Curlew (*N. lineatus*), and Swinhoe's Snipe (*Gallinago megala*). *Bull. Brit. Orn. Club* 25: 38–39.
- Engelmoer, M., & Roselaar, C. S. 1998. *Geographical Variation in Waders*. Kluwer, Dordrecht.
- Érard, C., & Etchécopar, R.-D. 1970. Contribution à l'étude des oiseaux d'Iran: résultats de la mission Etchécopar 1967. *Mem. Mus. Natl. Hist. Natur. Ser. A: Zool.* 64: 1–146.
- Eriksen, J., & Victor, R. 2013. *Oman Bird List: the official list of the birds of the Sultanate of Oman*. 7th edn. Sultan Qaboos University, Muscat.
- Flint, P. R., & Stewart, P. F. 1992. *The Birds of Cyprus: an annotated check-list*. BOU Check-list 6. 2nd edn. British Ornithologists' Union, London.
- Feeny, P. P., Arnold, R. W., & Bailey, R. S. 1968. Autumn migration in the south Caspian region. *Ibis* 110: 35–68.
- Gillissen, N., Haanstra, L., Delany, S., Boere, G., & Hagemeijer, W. 2002. *Numbers and Distribution of Wintering Waterbirds in the Western Palearctic and Southwest Asia in 1997, 1998 and 1999: results from the international waterbird census*. Wetlands International Global Series No. 11. Wetlands International, Wageningen.
- Goodman, S. M., & Meininger, P. L. (eds.) 1989. *The Birds of Egypt*. OUP, Oxford.
- Goutner, V., & Handrinos, G. 1990. The occurrence of Slender-billed Curlews *Numenius tenuirostris* in Greece. *Biol. Conserv.* 53: 47–60.
- Gregory, G. 2005. *Birds of the State of Kuwait*. Privately published, Skegness.
- Gretton, A. 1991. *The Ecology and Conservation of the Slender-billed Curlew (Numenius tenuirostris)*. ICBP Monogr. 6. International Council for Bird Preservation, Cambridge.
- , Yurlov, A. K., & Boere, G. C. 2002. Where does the Slender-billed Curlew nest, and what future does it have? *Brit. Birds* 95: 334–344.
- van der Have, T. M., Keijl, G. O., Mansoori, J., & Morosov, V. V. 2001. *Searching for Slender-billed Curlews in Iran, January–February 2000*. WIWO Report No. 72. WIWO, Zeist.
- , —, —, & — 2002. Waterbirds in coastal wetlands along the Persian Gulf coast of Iran, January–February 2000. *Zool. Middle East* 26: 71–88.
- Heinrich, G. 1928. Elburs Expedition 1927. *J. Orn.* 26: 238–313.
- Hirschfeld, E. 1995. *Birds in Bahrain: a study of their migration patterns 1990–1992*. Hobby Publications, Dubai.
- Hornman, M., & van Diek, H. 2004. A mid-winter census of waterbirds in Khuzestan province, Iran, 10–25 January 2004. In: de Boer, P., van Straaten, M., Meininger, P. L., Zekhuis, M., Hornman, M., van Diek, H., Willems, F., Felix, R., van Winden, E., & Oosterbaan, B. (eds.), *Waterbirds in Iran: results of a mid-winter count in the provinces of Gilan, Mazandaran, Khuzestan, Hormuzgan and Sistan-Baluchestan, January 2004*. Internal report to Dept of Environment, Tehran.
- Kasperek, M. 1990. On the migration of the Whimbrel, *Numenius phaeopus*, in Turkey. *Zool. Middle East* 4: 25–32.
- Khaleghizadeh, A., Scott, D. A., Tohidifar, M., Musavi, S. B., Ghasemi, M., Sehhatisabet, M. E., Ashoori, A., Khani, A., Bakhtiari, P., Amini, H., Roselaar, C., Ayé, R., Ullman, M., Nezami, B., & Eskandari, F. 2011. Rare birds in Iran in 1980–2010. *Podoces* 6: 1–48.
- Kirwan, G. M. 1997. A list of bird specimens held in the Robert's College, Bebek (Istanbul, Turkey) collection, with some comments on Mathey-Dupraz (1920–24). *Sandgrouse* 19: 30–38.
- , Boyla, K., Castell, P., Demirici, B., Özen, M., Welch, H., & Marlow, T. 2008. *The Birds of Turkey: the distribution, taxonomy and breeding of Turkish birds*. Christopher Helm, London.
- Konrad, V. 1994. Kennzeichen des Dunnschnabelbrachvogels (*Numenius tenuirostris*). *Orn. Mitt.* 46: 291–295.
- Kumerloeve, H. 1961. Zur Kenntnis der Avifauna Kleinasien. *Bonner Zoologische Beiträge* 12: 1–318.
- 1970. Zur Kenntnis der Avifauna Kleinasien und der europäischen Türkei (Ergänzungen – Hinweise – Fragestellungen). *Istanbul Fen. Fak. Mecm.* B 35: 85–160.
- McGhie, H. A. 2002. The egg of the Slender-billed Curlew at The Manchester Museum: a unique specimen? *Brit. Birds* 95: 359–360.
- Meininger, P. L., & Zekhuis, M. 2004. A census of waterbirds in Mazandaran Province, Iran, January 2004. In: de Boer, P., van Straaten, M., Meininger, P. L., Zekhuis, M., Hornman, M., van Diek, H., Willems, F., Felix, R., van Winden, E., & Oosterbaan, B. (eds.), *Waterbirds in Iran: results of a midwinter count in the provinces of Gilan, Mazandaran, Khuzestan, Hormuzgan and Sistan-Baluchestan, January 2004*. Internal report to Dept of Environment, Tehran.
- Mlíkovský, J. 2004. Remarks on some records of the Slender-billed Curlew (*Numenius tenuirostris*). *Sylvia* 40: 125–130.
- Moore, H. J., & Boswell, C. 1956. Field observations on the Birds of Iraq. Part I: Podicipidae–Laridae. *Iraq Nat. Hist. Mus. Publ.* 9: 1–109.
- Murdoch, D. A., & Betton, K. F. 2008. A checklist of the birds of Syria. *Sandgrouse Supplement* 2: 1–48.
- Nankinov, D. N. 1994. Bulgaria is of great importance

- for the conservation of Slender-billed Curlew *Numenius tenuirostris*. *J. Orn.* 135: 223.
- Nightingale, T., & Hill, M. 1993. *Birds of Bahrain*. Immel Publishing, London.
- Oláh, J., & Pigniczki, C. 2010. The first XX1st century record of Slender-billed Curlew (*Numenius tenuirostris*) in Hungary. *Aquila* 116/117: 49–53.
- Perennou, C., Mundkur, T., Scott, D. A., Follstad, A., & Kvenild, L. 1994. *The Asian Waterfowl Census 1987–91: distribution and status of Asian waterfowl*. AWWB Publication No. 86/IWRB Publication No. 24, Kuala Lumpur & Slimbridge.
- Porter, R. 2004. An encounter with a Slender-billed Curlew in Yemen. *Birding World* 17: 437–439.
- & Aspinall, S. 2010. *Birds of the Middle East*. 2nd edn. Christopher Helm, London.
- Ramadan-Jaradi, G., & Ramadan-Jaradi, M. 1999. An updated checklist of the birds of Lebanon. *Sandgrouse* 21: 132–170.
- , Bara, T., & Ramadan-Jaradi, M. 2008. Revised checklist of the birds of Lebanon 1999–2007. *Sandgrouse* 30: 22–69.
- Robertson, I. 2000. Rare birds, new species, trips abroad and hoodwinks. *Bull. Afr. Bird Club* 7: 153–154.
- Roselaar, C. S., & Aliabadian, M. 2009. Review of rare birds in Iran, 1860s–1960s. *Podoces* 4: 1–27.
- Scott, D. A. 2008. Rare birds in Iran in the late 1960s and 1970s. *Podoces* 3: 1–30.
- & Carp, E. 1982. A midwinter survey of wetlands in Mesopotamia, Iraq: 1979. *Sandgrouse* 4: 60–76.
- Serra, L., Baccetti, N., & Zenatello, M. 1995. Slender-billed Curlews wintering in Italy in 1995. *Birding World* 8: 295–299.
- Sharpe, R. B. 1896. *Catalogue of the Birds in the British Museum*. Vol. 24. Trustees of the British Museum, London.
- Shirihai, H. 1996. *The Birds of Israel*. Academic Press, London.
- Skerrett, A. 2011. Slender-billed Curlew has not occurred in Seychelles. *Bull. Afr. Bird Club* 18: 117.
- Stresemann, E. 1928. Die Vögel der Elburs-Expedition 1927. *J. Orn.* 76: 313–411.
- & Grote, H. 1943. [Is *Numenius tenuirostris* heading for extinction?] *Orn. Monatsb.* 51: 122–127. (In German)
- Thévenot, M., Vernon, R., & Bergier, P. 2003. *The Birds of Morocco: an annotated checklist*. BOU Checklist No. 20, Tring.
- Ticehurst, C. B., Buxton, P. A., & Cheesman, R. E. 1921–22. The birds of Mesopotamia. *J. Bombay Nat. Hist. Soc.* 28: 210–250, 381–427, 650–674, 937–956.
- Vangeluwe, D., Handrinos, G., & Bulteau, V. 1998. Le point sur le Courlis à bec grêle *Numenius tenuirostris*. Où l'observer, comment l'identifier? *Ornithos* 5: 22–35.
- Walker, F. J. 1981. Notes on the birds of northern Oman. *Sandgrouse* 2: 33–55.
- Willems, F., van Winden, E., Slaterus, R., & Biéro, T. 2002. Waterbirds in the Helleh Protected Area and other Coastal Wetlands in the Bushehr Province, Islamic Republic of Iran, January 2002. A search for Slender-billed Curlew *Numenius tenuirostris*. WIIWO, Zeist, & Dept of Environment, Tehran.
- Zarudny, N. A. 1900. [An excursion through north-eastern Persia and birds of this country]. *Zapiski Akademii Nauk po Fiziko-Matematicheskogo Otdeleniyu*. Ser. (8) 10: 1–262. (In Russian)
- 1903. [Birds of eastern Iran. Ornithological results of an excursion to eastern Iran in 1898]. *Zapiski Russkogo Geograficheskogo Obshchestva po obshchei Geografii* 36(2): 1–468. (In Russian)

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Short paper

Pale plumage variant of Lesser Spotted Eagle: a potential pitfall

Abstract A poorly known pale variant plumage of the Lesser Spotted Eagle *Aquila pomarina* is described and illustrated. This plumage presents a pitfall for observers unfamiliar with juvenile *Aquila* eagles, particularly the rather similar 'fulvescens' plumage of Greater Spotted Eagle *A. clanga*, but also juvenile Eastern Imperial *A. heliaca* and Spanish Imperial Eagles *A. adalberti*.

Birders familiar with the Greater Spotted Eagle *Aquila clanga* will be aware of the strikingly pale 'fulvescens' plumage variant. Although these paler birds are more frequent among Asian populations, they do occur in Europe and this plumage is illustrated in popular field

guides and handbooks (e.g. Forsman 1999, Svensson *et al.* 2009). It is less widely appreciated that a pale variant plumage also occurs in the Lesser Spotted Eagle *A. pomarina*, and this is seldom illustrated. Although this variant is rare, the potential exists for such birds to be mistaken for 'fulvescens'



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398–400. Juvenile (2CY) pale variant Lesser Spotted Eagle *Aquila pomarina*, Ardahan, northeast Turkey, June 2014. The resemblance to the imperial eagles, in particular to worn juvenile Spanish Imperial Eagle *A. adalberti*, is striking. Features shared with both imperial eagles include pale underwing-coverts that contrast with the darker remiges; an obviously dark tail that contrasts with the paler undertail-coverts; streaking on the breast that forms a darker breast-band; and paler head (with a darker eye-line or mask). It differs from both imperial eagles by the presence of a prominent pale double crescent at the carpal bend, and the less contrasting pale 'window' in the inner primaries (in the imperial eagles this would appear more obvious, owing to the outer primaries being darker). The darker carpal patch and 'thighs' are not usually shown by the imperial eagles. In terms of wing formula, note the short P4, and also the extensive dark barring to the underside of the primaries and secondaries. The wings appear flat on a soaring bird (plate 400), although the 'hands' are pressed downwards here.

Amir Ben Dov



401. Pale variant juvenile Lesser Spotted Eagle *Aquila pomarina*, Ben Shemen Forest, Israel, 25th September 2014. The underparts, including the underwing- and upperwing-coverts, appear visibly paler than those of a typical bird, yet the dark barring on the primaries and secondaries matches that of a typical bird. The strong double carpal crescent is typical of Lesser Spotted. The overall appearance is similar to that of juvenile Spanish Imperial Eagle *A. adalberti*, including the noticeably darker and streaked breast-band, a feature shared with both the imperial eagles.

Greater Spotted Eagle or for juveniles of either Eastern Imperial *A. heliaca* or Spanish Imperial Eagles *A. adalberti*. Forsman (1999) included a brief description of the pale form of Lesser Spotted Eagle; here, we describe the plumage in more detail and discuss the key features for its separation from similar species.

Description

We became aware of pale variant Lesser Spotted Eagles while observing autumn migration in Israel, but also encountered it during the breeding season in eastern Turkey (see plates 398–400). While this pale variant occurs most frequently in juveniles, it is also known from immature and near-adult birds,

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402. Juvenile pale variant 'fulvenscens' Greater Spotted Eagle *Aquila clanga*, Dhofar Mountains, Oman, 27th November 2011. Contrast between the dark flight feathers and the pale orange underparts of fresh juvenile 'fulvenscens' is striking. Structure, darker remiges and paler 'thighs' differ from a pale Lesser Spotted *A. pomarina*. Note that a double pale 'comma' at the wrist can be shown by some Greater Spotted Eagles, although it is generally less complete and less obvious than in Lesser Spotted.



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403. Juvenile Eastern Imperial Eagle *Aquila heliaca*, Raysut, Oman, 13th November 2013. In juvenile Eastern Imperial Eagle, the darker outer primaries contrast with the pale inner primaries to create a strikingly pale panel, which is more obvious than that of a pale variant Lesser Spotted. In addition, Eastern Imperial Eagle shows a heavier head and neck, and longer tail than Lesser Spotted, and the wings are proportionately longer, narrower and more pointed than those of Lesser Spotted.

but we have not so far observed this plumage in adults. From a total of about 30,000 Lesser Spotted Eagles observed in Israel during autumn, we positively identified 12 pale-plumaged birds (including nine juveniles, and two 2CY birds), while among c. 15,000 birds observed in Turkey in both spring and autumn during a five-year period we counted eight birds (all juveniles). At Batumi, Georgia, during three separate autumn counts, we saw no pale birds among the several hundred Lesser Spotted Eagles observed.

Compared with a typical Lesser Spotted Eagle, the entire body, plus the underwing- and upperwing-coverts of a pale variant appear visibly paler, ranging from tawny-buff to pale buffish-isabelline, fading to off-white or creamy on the lower belly, flanks, vent and undertail-coverts. Typically the 'thighs' appear pale brown, contrastingly darker than the flanks. Overall, the general appearance is very similar to that of juvenile Spanish Imperial Eagle. Most birds also display a noticeably darker and streaked breast-band, a feature shared with both the imperial eagles.

The flight feathers and tail feathers of the

pale variant are more similar to those of a typical bird, including the regular dark barring, although the pale window in the inner primaries may appear more obvious than on typical birds, again recalling the juvenile imperial eagles. The greater underwing-coverts and underwing primary coverts are dark, contrasting with the generally pale underwing and appearing as a dark band across the middle of the wing (with white tips mainly in the greater coverts). As in typical birds, the pale variant generally shows an obvious double pale comma at the 'wrist' (carpal bend). The upperwing pattern is similar to that of the underwing. Worn second-calendar-year birds appear even paler, thus even more similar to '*fulvescens*' Greater Spotted Eagle and the imperial eagles. Older immatures are similar to juveniles in their appearance and much paler than the equivalent plumage of a typical Lesser Spotted Eagle.

Separation from similar species

Pale variant Lesser Spotted Eagle differs from '*fulvescens*' Greater Spotted by soaring and gliding on flatter wings; its longer tail and



404. Juvenile Spanish Imperial Eagle *Aquila adalberti*, Spain, January 2014. Juvenile Spanish Imperial Eagle shows, on average, even paler inner primaries than Eastern Imperial (plate 403) and pale variant Lesser Spotted Eagles (and thus the contrasting panel is even more obvious). Note also that the remiges as a whole are generally darker in juvenile Spanish Imperial Eagle compared with a typical Lesser Spotted. The structural differences from a pale-variant Lesser Spotted highlighted in the previous caption also apply.

neck/head; narrower wings and 'hand', which create a more pointed wing-tip; and to some extent by differences in wing formula – Greater Spotted has a longer/more distinct P4 (primaries numbered descendantly, so P10 is the outermost), although this is less useful in juveniles, when the wing formula of the two species is more similar. The '*fulvescens*' variant of Greater Spotted Eagle is always paler than the equivalent pale variant of Lesser Spotted, with the dark/pale contrast being more striking; in '*fulvescens*', pale areas appear almost orange in fresh juveniles and pale creamy or off-white in worn birds. Differences in the dark barring on the primaries and secondaries match those of typically plumaged birds and, when present, the double carpal crescent, formed by whitish bases to the underside of the primaries and primary coverts, is typical of Lesser Spotted although not diagnostic (a weaker – less complete and less obvious – double crescent can be shown by some Greater Spotted Eagles).

Separating pale variant Lesser Spotted from the juvenile imperial eagles requires extreme care. Overall, the plumage and flight style of both species are similar to those of

Lesser Spotted, and both soaring and gliding silhouettes are similar. However, the imperial eagles have a heavier head and neck and a longer tail, and the wings appear longer, narrower and more pointed than in Lesser Spotted Eagle. The wing formula also differs, with juvenile imperial eagles showing a more obviously 'fingered' seventh primary (P4), which is further emphasised by their narrower and longer primaries. The pattern of dark barring on the primaries and secondaries is similar in all three species; the dark bars on the imperial eagles are often wider and fewer in number than in Lesser Spotted but this feature is variable. The darker, almost solidly black outer primaries of juvenile Eastern Imperial and, especially, juvenile Spanish Imperial Eagle contrast with the pale inner primaries to create a strikingly pale panel. Although pale variant Lesser Spotted also shows pale inner primaries, the contrast is much less striking. Other plumage differences include the larger and more conspicuous pale rump and uppertail-coverts of the imperial eagles compared with pale variant Lesser Spotted. In addition, the imperial eagles rarely show a pale comma at the wrist (it is extremely unusual in Spanish Imperial),

and they also lack a dark carpal patch (at best showing only a hint of dark blotching in the carpal area). With perched birds, other structural differences become apparent. Bill structure differs, with the imperial eagles showing a stronger, heavier and deeper bill, complete with oval or oblong nostril, compared with the smaller bill and rounded nostril of Lesser Spotted. The imperial eagles also show thicker, fuller and wider 'thighs', stronger legs and feet, and a bigger and heavier body typically held horizontally, whereas Lesser Spotted appears slither and often adopts a more upright stance.

A further potential pitfall (albeit one outside the Western Palearctic) is Indian Spotted Eagle *A. hastata* (formerly treated as a race of Lesser Spotted Eagle), which is resident in the Indian subcontinent. It occurs alongside wintering Greater Spotted and Eastern Imperial Eagles and is also known to have a pale variant plumage (Brian J. Small pers. comm.). Usually, the paler plumages of

this taxon show pale/dark barring or obvious broad, pale spots on the flanks and 'thighs', as well as the tarsal feathering; features not shown by pale-variant Lesser or Greater Spotted. Furthermore, the patterning of the remiges in Indian Spotted Eagle shares features with both Lesser Spotted and Greater Spotted Eagles, with broad dark barring on the basal part of the feathers and narrower, almost 'ghosted' barring towards the feather tips.

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References

- Forsman, D. 1999. *The Raptors of Europe and the Middle East*. Poyser, London.
 Svensson, L., Mullarney, K., & Zetterström, D. 2009. *The Collins Bird Guide*. 2nd edn. HarperCollins, London.

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405. Juvenile Lesser Spotted Eagle *Aquila pomarina* Qurayyat, Oman, 2nd December 2005. This typical juvenile Lesser Spotted Eagle shows conspicuous barring across the secondaries and onto the innermost primaries, a feature also shown by pale variant birds. Compare this with Greater Spotted *A. clanga* in which the barring is faint and inconspicuous, and Eastern Imperial where the barring is most conspicuous across the primary bases and almost absent from the secondaries.

Obituary

Elizabeth Lack (1916–2015)

Elizabeth Lack's primary ornithological claim to fame is as one of the two editors of *A Dictionary of Birds* (Poyser, 1985, co-edited with Bruce Campbell), although she had been interested in birds from childhood and played a part in several other projects. Elizabeth grew up near Sevenoaks in Kent, in the latter stages in a house built by her father and named Spinners' Wood as there were Night-jars ('Spinners') nesting just outside the bottom fence on the edge of Knole Park.

After the Second World War, which she spent mainly driving and mending ambulances, she wrote to Richard Fitter to ask if there were any jobs in ornithology for someone who had no qualifications (other than half a secretarial course). Knowing that David Lack, recently appointed as Director of the Edward Grey Institute, at Oxford, required a secretary, Richard passed on her letter with the comment 'another for your reject file'. Yet she got the job and, soon

after, became field assistant. Over the next six years or so she did fieldwork with the EGI on Robins, Long-tailed Tits, birds in Breckland forests and, especially, on Swifts in the Oxford University Museum tower. The ladders then used to get up into the tower were hazardous and on one occasion she did not return for lunch. This caused a major panic and David rushed to the tower, only to find that she was fine and watching the first recorded fight between Swifts – and did not want to leave until it was over. She and David married in 1949, and her observations resulted in several joint papers. She also made the initial discovery of the large insect migration over the Pyrenees when they were studying bird migration.

The advent of a family effectively put a brake on her own work. She was the rock looking after the family home to allow my father to be as productive as he was. It was only after he died, in 1973, and the family had largely fledged, that she went back to bird work. She did the bulk of the work needed to get my father's last book, *Island Biology*, through to publication (in 1976), and in the early 1980s took on the Dictionary. This consumed her life for several years as she took an increasingly leading role in the editing and correspondence with the many authors and the BOU. Subsequently she took a major, but unsung, role in editing *The Atlas of Wintering Birds in Britain and Ireland* (Poyser, 1986) and helping it through the publishing process.

Until she stopped driving, aged 90, she remained active as a volunteer for various charities, especially Victim Support for which she visited over 2,000 people. And she retained her abiding interest in birdwatching, always wanting to know about the latest discoveries until the end, and always being aware of what was singing outside her windows. She died peacefully at home leaving four children, six grandchildren and two great grandchildren.

Peter Lack



Photo courtesy of the Lack family

406. David and Elizabeth Lack, in Jamaica in 1971.

Letters

Social wasps in the diet of breeding Honey-buzzards in Wiltshire

As a raptor enthusiast I was fascinated to read the recent paper on breeding Honey-buzzards *Pernis apivorus* in northern Germany (Ziesemer & Meyburg 2015), but in view of the fact that they named just two species of social wasp (Vespidae) as food in their study (the Common Wasp *Vespula vulgaris* and the German Wasp *V. germanica*), it seems worth drawing attention to the following.

Combridge *et al.* (2013), in an account of breeding Honey-buzzards in Wiltshire, reported an analysis of wasp comb at 19 successful nests, which showed that the adults had been feeding on no fewer than six social wasp species. Comb produced by the following three species was most frequently recorded: Red Wasp *V. rufa* (at all 19 nests), Common Wasp (at 17) and Median Wasp *Dolichovespula media* (at 16). The remaining three species were Hornet *Vespa crabro* (at eight nests), Tree Wasp *D. sylvestris* and German Wasp (at two each).

The Median Wasp is a relatively recent colonist to Britain from continental Europe (it was first reported in Sussex in 1980, where the

first nest was found in 1985; Else 1994). Combridge *et al.* suggested that this wasp's arrival and spread in southern England could have aided the recovery in Honey-buzzard breeding numbers reported by Wiseman (2012) in his Hampshire study area. In this connection, it is worth noting that Brock (2014) stated that the Median Wasp is 'now widespread and common in southern England and Wales, spreading north to southern Scotland'.

References

- Brock, P.D. 2014. *A Comprehensive Guide to the Insects of Britain and Ireland*. Pisces Publications, Newbury.
Combridge, P., & the Wiltshire Raptor Group. 2013. Honey-buzzards breeding regularly in Wiltshire. *Hobby* 38: 104–108.
Else, G. R. 1994. Social Wasps. *British Wildlife* 5: 304–311.
Wiseman, E. J. 2012. Honey-buzzards in southern England. *Brit. Birds* 105: 23–28.
Ziesemer, F. 1997. Raumnutzung und Verhalten von Wespenbussarden (*Pernis apivorus*) während der Jungenaufzucht und zu Beginn des Wegzuges – eine telemetrische Untersuchung. *Corax* 17: 19–34.
— & Meyburg, B.-U. Home range, habitat use and diet of Honey-buzzards during the breeding season. *Brit. Birds* 108: 467–481.

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Editorial comment Fridtjof Ziesemer has commented as follows: 'In Schleswig-Holstein, as in other parts of Germany, various species of social wasps have been shown to be important food species for Honey-buzzards. As mentioned in our recent article (p. 478), a greater number of wasp prey species (six) were found in an earlier study (Ziesemer 1997). However, during the recent study, only two wasp species were found in the diet of the Honey-buzzards studied, and one possible reason (again outlined on p. 478) is that, since the birds were not fitted with transmitters until July–August, the chance of establishing *Dolichovespula* species and *Vespula rufa* as prey was reduced. There may be additional factors, of course, including climate, soil and habitat.'

More old records?

After four atlases – epitaphs to the reducing commonwealth of birds and man in Britain & Ireland – I lack any conviction that yet more history is valuable to conservation practice. For 65 years, most of my records of common birds have been distilled in annual observatory and county reports and, eventually, national handbooks. Occasionally I

extract telling patch events or trends and send these directly to the BTO. To preserve some examples of the (Threatened) field sketch, a catalogue of mine will go to the NHM at Tring. Otherwise the recycling bin does indeed beckon.

In what will certainly be my last patch, the outcome of 30 years of close study is stark. In

the superficially pretty and varied Needwood Forest area of east Staffordshire, bird mass is secured only by some generalist species, a few incomers and feral wildfowl. As for more specialist residents, and passage and winter immigrants, those contingents are draining away inexorably. In 2007–11, when surveying my 13 Atlas TTV and two BBS squares, many birds appeared to have 'reserve tanks' in their populations. Yet, only four breeding seasons on, and to give just two examples, two of my

last three breeding Northern Lapwing *Vanellus vanellus* colonies have failed and along my 30 km of line counts not one Willow Warbler *Phylloscopus trochilus* refreshed my ear (and soul) with its sweet-sad song. Given the reams of field reconnaissance already provided by amateurs, the old patrol soldier in me grows impatient for the generals of conservation professionals to decide which bird strongholds (away from reserves) are defensible and which are not.

D. I. M. Wallace, Mount Pleasant Farm, Main Road, Anslow, Burton on Trent, DE13 9QE

Archiving your bird records

The letter by Ray Eades (*Brit. Birds* 108: 428–429) and the response from the BTO develops further the issue of the long-term archiving of bird data and its use, but does not address some wider issues. In contrast to Ray, who feels that 'clearly the place to submit electronic data is the BTO/RSPB/BWI/SOC/WOS BirdTrack database', I submit my own bird records to my Local Environmental Records Centre (LERC) plus any highlights to my local bird club for their annual reports.

The reason is that I also submit records for other fauna and flora and it is simply more efficient to do this all at once. More important, in my own mind, is the use to which these records are put. LERCs serve the local community, and in an era where the countryside, local wildlife sites (whether designated as such or not) and species of importance at a local level are constantly under threat from development and change, it is important that up-to-date, reliable and verified wildlife data are used and are accessible to decision-makers such as local authority planning departments and others. Data are submitted at six-figure grid reference level and can be retrieved traditionally via a simple database, or in some cases by more sophisticated methods using a geographic information system. For the records of most taxa, including breeding records for birds, and in most situations relating to conservation, the requirement for six-figure grid references, or better, is critical.

LERCs come in all shapes and sizes, many operated by either local authorities or the Wildlife Trusts, with some by independent

charities, and do have an umbrella body – the Association of Local Environmental Record Centres (ALERC) – but despite the wealth of legislation urging public bodies and others to take account of biodiversity in their decision-making processes, they are often in the line of fire when cuts are being considered, so much so that there are real risks to complete archives being lost at the whim of new management, or skills and technological know-how lost when staff move on.

In the long term, it is crucial to have a system that properly values our wildlife data, much of it generated by expert volunteers, which can serve not only the requirements of national monitoring organisations but also those of local public and private organisations, and which is fundamentally supported by all – financially as well as in principle. How easy is it for decision-makers and the public to have confidence that all the wildlife data for a particular site is verified and available electronically – ready to be used to enable the best possible decision – when the sources of such data are disparate? Are the LERC network, voluntary organisations and national bodies working together to make the best and most efficient use of our data?

It seems ironic that the phrase 'evidence-based decision-making' seems to permeate through many organisations, and is seen as a cornerstone for robust and transparent decisions, but supporting the proper archiving, management and co-ordination of national and local wildlife datasets to enable this to happen remains elusive. It's the wildlife that loses out.

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Notes

A count of Northern Gannets on Grassholm in 2015

Grassholm, lying 12 km off the coast of Pembrokeshire, has the only colony of Northern Gannets *Morus bassanus* in Wales. It is the fourth-largest colony in the world, after the Bass Rock and St Kilda in Scotland and Bonaventure in Canada, and holds about 7.5% of the world population (Murray *et al.* 2014, 2015). Changes in the size of this gannetry have been well documented in a series of counts extending back to when the colony was founded, in around 1820 (Lovegrove *et al.* 1994). Since 1964, numbers have been censused by aerial photography using the only practical count unit of the Apparently Occupied Site (AOS), i.e. a site occupied by one or two Gannets, irrespective of whether nest material or chicks are visible or not. Counts therefore include all nests in a colony plus an unknown proportion of sites where birds were present but breeding status was uncertain. As far as possible, areas identified as occupied by non-breeders are excluded.

Numbers of Gannets on Grassholm have increased rapidly, from 15,528 nests in 1964 to a peak of 39,292 AOS on 2nd June 2009 (Barrett & Harris 1965; Murray 2009; Morgan 2012). As part of a decadal count of Gannets in the UK, an aerial survey was carried out on 3rd June 2015. The survey flight arrived in the vicinity of the island at 12.45 pm and several wide circuits were made to familiarise the pilot with the island and the birds. The flight over and around the island lasted for 25 minutes and included several passes directly over the colony, in a descending pattern from about 700 m down to 200 m. This was to ensure that birds were aware of the aircraft and would not react adversely. Some 600 images were taken using Canon EOS 1100D digital cameras.

Later, the images were analysed, when AOS on five images were blocked out and a tally kept using either Photoshop or Paint Shop Pro 7 software (details in Murray 2015).

Two independent counts were 35,836 (MPH) and 36,186 (SM) giving a mean of 36,011 AOS, an overall decrease of 8.4% since the last count in 2009 (fig. 1). An almost complete lack of non-breeders was apparent from the aircraft on the approach to the colony and comparison of the 2015 photographs with those taken in 2009 confirmed that the non-breeding component of the colony was absent (plate 407). A week after the aerial survey non-breeders were reported back on the colony in large numbers. A land visit on 14th July 2015 found no clear change to colony limits compared with 2009 but two new satellite groups had become established, each holding four nests with eggs or young. Both were well apart from the established breeders and the dense crush of non-breeders pressing against them. Both groups are visible in the aerial photographs but were discounted as site-holders, which underlines the importance of ground truthing. It may be that these small groups serve as a nucleus for future expansion.

Experience of past aerial surveys of UK gannetries has shown that breeding birds



407. The North Gut area of Grassholm gannetry, 3rd June 2015. The bare ground on the right-hand colony edge is normally crowded with non-breeders, whose presence is steadily eroding the vegetation cover.

Stuart Murray

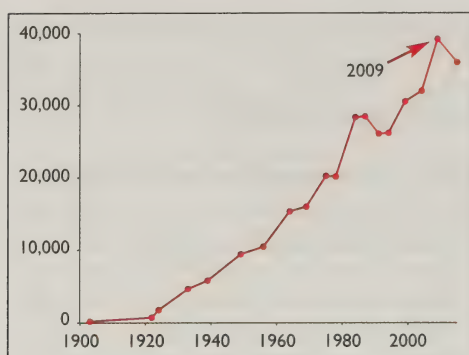


Fig. 1. Estimates of the numbers of nests (prior to 1964) or AOS (subsequently) of Northern Gannets *Morus bassanus* on Grassholm 1903–2015. Data from sources mentioned in the text.

usually ignore the presence of small, slow-moving aircraft, which was SM's experience on the previous Grassholm survey in 2009. At most colonies, non-breeders leave the ground and fly out to sea, but, inexplicably, this does not normally happen at Grassholm. About 10,000 non-breeders were clearly seen and counted from photographs taken in 2009. A count from the photograph used for the survey in mid June 1964, when the colony limits were marked on the image after a visit to the island at the end of that season, shows that at least 4,400 non-breeders were present when the population was put at 15,528 nests (Barrett & Harris 1965). Probably coincidentally, both of these counts suggest a ratio of one immature present for every seven nests or site-holding adults in the population.

The absence of virtually all non-breeders simultaneously without any obvious cause of disturbance was unprecedented and had not been witnessed previously by RSPB staff, who visit the site regularly in summer. Why the non-breeders had apparently deserted the island en masse was not obvious on the day of the 2015 survey, which was conducted during bright sunshine and light winds. However, the previous 48 hours had seen one of the worst unseasonal storms on record. On nearby Ramsey Island, 24 mm of rain was recorded in 12 hours with wind gusts up to

storm force in sea area Lundy overnight (60–100 km/h). However, there is nothing to suggest that site-holding birds were similarly affected. Judging by the large pools of standing water, some nests could have been flooded out and these would perhaps have shown as deserted mounds on photographs, but no evidence for this was seen in the photographs.

In the 2009 survey, the area of the colony occupied by site-holders was not ground truthed and it is likely that the count misclassified many non-breeders as site-holders. Taken at face value, the 2015 count suggests a decrease in numbers. However, with hindsight, it is more likely a truer estimate of the breeding population and fig. 1 suggests that the count in 2009 was probably an overestimate. There has certainly been no increase in the numbers of AOS in the main colony since 2009, nor has there been any unusual mortality recorded that could explain a large decline; the population at present is probably best considered as being stable. This would fit with the pattern of lack of change in numbers at the large gannetries off the west coast of the UK, notably St Kilda and Ailsa Craig during the last decade. This is in marked contrast to the situation in the North Sea, where the numbers on the Bass Rock are still increasing rapidly (Murray *et al.* 2014, 2015).

Acknowledgments

Thanks are due to our pilot, Alex Rhodes, and back-seat photographer, Sarah Money.

References

- Barrett, J. H., & Harris, M. P. 1965. A count of gannets on Grassholm in 1964. *Brit. Birds* 58: 201–203.
- Lovegrove, R., Williams, G., & Williams, I. 1994. *Birds in Wales*. Poyser, London.
- Morgan, G. 2012. The bird populations of Ramsey and Grassholm. *Brit. Birds* 105: 716–732.
- Murray, S. 2009. A count of the Grassholm gannetry in 2009. Contract report to CCW, Bangor.
- 2015. A count of the Grassholm gannetry in 2015. Contract report to RSPB, Bangor.
- , Harris, M. P., & Wanless, S. 2014. The Bass Rock – now the world's largest Northern Gannet colony. *Brit. Birds* 107: 765–769.
- , —, & — 2015. The status of the Gannet in Scotland in 2013–14. *Scottish Birds* 35: 3–18.

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Reviews

Northumbria Bird Atlas 2007–11

Tim Dean, Dick Myatt, Muriel Cadwallender and Tom Cadwallender
Northumberland & Tyne-side Bird Club, 2015
Hbk, 512pp; full colour throughout
ISBN 978-0-9557406-6-4, £25.00

This is a large (larger than A4) and heavy book, filled with colourful maps, tables and text describing the breeding and winter avifauna of the old county of Northumberland (which includes Newcastle and other local authority areas north of the River Tyne and extends north and westwards into more remote country bordering Cumbria and the Scottish Borders). This large and varied county has a long coastline, the largest planted forest in England and a variety of other habitats across the altitudinal range from sea level to a maximum of 815 m at the Cheviot. Almost half of the county, which covers around 1,440 tetrads, lies above 180 m.

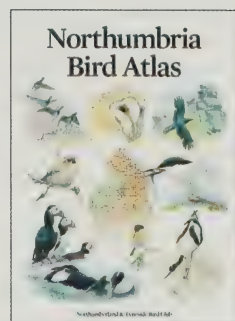
Northumberland has already been the subject of two tetrad atlases, one of breeding birds (Day *et al.* 1995) and one of wintering birds (Day & Hodgson 2003). Fieldwork for the previous breeding bird atlas coincided with the 1988–91 national atlas with an extra two years' data included. For this new book it was planned to coincide exactly with *Bird Atlas 2007–11*, so unlike some local atlases, there was no additional fieldwork after July 2011. The team did well to survey the whole area in just four years, although the fact that there are a few identical gaps in the maps for widespread species such as Wren *Troglodytes troglodytes*, Blackbird *Turdus merula*, Robin *Erithacus rubecula* and Dunnock *Prunella modularis* suggests that some tetrads did not receive quite sufficient coverage.

The book begins with seven short introductory chapters, describing the landscape, climate and weather, how the data were collected and how they were analysed and presented. The species accounts in the book are laid out in a similar way to many other atlases; all species are treated to a double-page spread with a photograph, text, a table comparing results for winter and breeding seasons from all the local atlases and up to four maps: winter and summer abundance, distribution change and breeding distribution. The abundance maps use the same key for all species, which allows easy comparison between species, but the pale colours used for the lower numbers counted make

them hard to pick out against the green background and so on some maps the actual distribution is not clear. The text size is large and some of the photos very large – all of which leaves less room for analysis of the maps. With a wide range of habitat types and altitudes there should be scope to link these with the distributions and changes mapped. It is good to see them being referred to, but there seems not to have been any deeper analysis done to support the comments, which would have given them more clout. A common theme is the loss of breeding birds from the edges of the uplands, shown especially well by the Yellowhammer *Emberiza citrinella*. Is there a common theme, such as altitude or land use, to the lost tetrads? As is the case with all atlases, the maps and statistics raise questions and the reader is not always rewarded with an answer. For instance, the distribution change map for Common Kestrel *Falco tinnunculus*, a species apparently in decline for reasons not yet fully understood, shows a loss concentrated in the higher ground west of the county. This is attributed in part to intra-guild predation and competition by larger raptors in these areas. Yet across the area, twice as many tetrads show gains as losses and these are more widespread in the east and centre of the county. Perhaps there is also some correlation with land use at work here.

Many of the changes mirror at the local scale what we have become aware of nationally, largely through *Bird Atlas 2007–11*, but it is fascinating to see the large breeding-season increases of species such as Great Spotted Woodpecker *Dendrocopos major* (+269%), Jay *Garrulus glandarius* (+145%), Common Chiffchaff *Phylloscopus collybita* (+257%), Blackcap *Sylvia atricapilla* (+142%), Garden Warbler *Sylvia borin* (+144%) and Reed Bunting *Emberiza schoeniculus* (+181%).

The distribution change maps look similar to those in *Bird Atlas 2007–11*, as they show major and minor gains and losses. However, the



meanings are different and I found them rather confusing. A major gain or loss is shown when the data being compared are equivalent (based on comparable methodologies), whereas minor changes arise when something that would not have been recorded previously (because of the methodology) was recorded in the later survey. For species present all year round, composite change maps are shown and therefore it is not clear what has happened to the populations of the birds in each of the two seasons. What it does mean is that there are no breeding-season change maps for resident species, which would have been interesting to see.

There are three detailed appendices. The first provides population estimates of both breeding pairs and individuals in winter, and a measure of the proportion of the national total based on TTV data from *Bird Atlas 2007–11*. For many species this provides a sound measure of numbers and is to be welcomed. The second appendix details the figures behind the maps and tables in the species accounts. Appendix 3 gives the statistics in terms

of species richness for every tetrad surveyed. There is a full list of contributing observers and a gazetteer of sites. I particularly liked the postscript, 'Confessions of a Mad Atlas Worker', which nicely encapsulates the obsessive nature of atlasing, which I can fully identify with! Tim Dean, the self-titled mad atlas man, hit his target of surveying 1,000 tetrads within the county, just – he achieved it on the very last day of the survey, 31st July 2011.

Thanks to funding from the Heritage Lottery Fund, this book is very good value at £25 and is a fitting tribute to the hard work of the fieldworkers and especially the team behind the compilation of this book. Like all tetrad atlases, it is an essential purchase for anyone with a knowledge of, or interest in, the area covered, but the detailed changes apparent within the maps mean that there are important messages for those interested in the changing status of our avifauna.

Mark Holling

Collins BTO Guide to Rare British Birds

By Paul Sterry and Paul Stancliffe

Collins, 2015

304pp; over 700 colour photographs

Hbk, ISBN 978-0-00-755154-5 Wild Sounds price £25.99, quote BB086

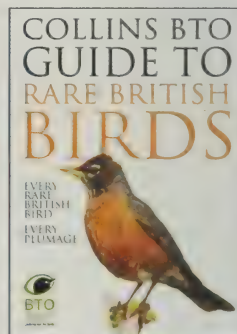
Pbk, ISBN 978-0-00-755156-9 Wild Sounds price £20.99, quote BB087

Since the 1950s, the association of Collins or the BTO with ornithological references has been a guarantee of their merit. So I had noted the announcements of two new Collins/BTO photographic guides with unusual interest but no prescience that I would be given both at the 2015 Birdfair. Pleased but also embarrassed, I offered to review the second, which addresses 340 rarer British and Irish birds. Of these, 151 non-passerines are featured, most of them with three images, before 139 passerines, most with two images each; after that, only eight of the 50 rarest species are illustrated within a very brief treatment. Even so, over 700 photographs of nearly 300 birds taken by Paul Sterry and over 50 other photographers is no mean offering in one handy book.

To return the BTO's favour fairly, I first had to set aside my view that only truly gifted observers-cum-artists illustrate field guides really instructively. Although much impressed by the recent industry of Richard Crossley, I have found his plethora of images and short, challenging texts an

uncomfortable mix. Hence my first scan of this book was nerve-racking, but having gone more slowly through it (and its companion volume on commoner species – read the review on pp. 553–554), I started to relax. The authors' formula of fewer, closer birds and text with fuller sentences did feel more like home. Gradually, I began to find real gems of photographic instruction. The juxtaposition of Cackling *Branta hutchinsii* and Lesser Canada Goose *B. canadensis parvipes* was totally apt; the flying Spotted Sandpiper *Actitis macularia* was spot on; and when I got to the three flying Short-toed Larks *Calandrella brachydactyla*, I actually cheered. Since most of the photographs were new to me, their content was also refreshing.

Looking more critically, I noted some choices of pose that did not actually illustrate linked characters and a few unfortunate processing errors or strange lighting effects. The latter glared in the



flying drake Surf Scoter *Melanitta perspicillata* and Hoopoe *Upupa epops* and should really have been corrected. Rather more vexing was the authors' decision to feature mostly adult plumages or those not most likely to be worn by vagrants. Overall, however, the size and spacing of the images and their accurate colour printing conveyed most species' jizz and plumage detail very well. So what about the text?

To be at ease with the text rhythms and contents, once again I felt the need to sample both volumes. In this one, I found the introductory guide to plumage topography, identification process and vagrancy vectors helpful. These and the interspersed well-constructed features on difficult tribes gave sound preparation for the individual species accounts. Their sequential discipline consists of English and Linnaean names, BTO code, length (but not wingspan), species capsule, plumage marks, main vocal clues, habits, status and habitats (but not peak occurrence periods). It worked well.

Conversely in closer readings, I soon missed the (surely still helpful) italicised emphases of

diagnostic characters. I was also miffed by the scarcity of notable behavioural actions – for example, no mention of tail dipping by either common or rare Chiffchaffs *Phylloscopus collybita* nor of tail spreading by both reed buntings *Emberiza schoeniclus* and *E. pallasii*. Such avian signals represent almost the last field-identification study wide open to amateur observers. Who better than the BTO to promote the challenge of its completion? (And to reduce the cloying overlay of DNA findings, which are provoking hedonistic split after split, and distracting us from a full perception of actual species recognition kits?!)

My whinges apart and with young observers in mind, the *Collins BTO Guide to Rare British Birds* gets from me a full CREDIT. If revised additions appear in due course, as in other classic BTO guides, it could well complement the reigning champion *Collins Bird Guide* for many years. Already it sits beside the latter on my bookshelf, while the first volume has gone smartly on to my grandson.

D. I. M. Wallace

A Bird Observatory is Born

By Joan James

Privately published, 2015

Pbk, 96pp; many illustrations

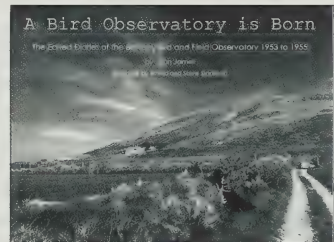
ISBN 978-1-943278-21-3, £10.00

This little book comprises the edited diaries of the Bardsey Bird and Field Observatory, 1953 to 1955. The author's great, great, great grandmother was born on the island in the late 1780s – now *there's* a connection! The introductions to the first annual report by two of the founding fathers, Ronald Lockley and William Condry, are followed by extracts from the Observatory logs, those for 1954 and 1955, summarised by month. It is an extraordinary account of voluntary endeavour and fortitude. The book is supplemented by photographs, both historical and more recent, and illustrations by Emma Stansfield, wife of the present,

long-serving
w a r d e n ,
Steve.

If you have never been to Bardsey, this book could well lure you there. Fortunately, Water Rails *Rallus aquaticus* will not be on the menu: in 1953 such casualties at the lighthouse were consumed. The notorious white light, which caused so many deaths, has now been replaced by red. All proceeds from the sale of the book pass to the Bardsey Bird Observatory.

David Saunders



Walking with Birds: an exploration of wildlife and landscape in a Cumbrian valley

By Colin Whittle

Brambleby Books, 2015; pbk, 304pp; 16 watercolour plates; ISBN 978-1-908241-35-1, £9.99

This book explores the wildlife, especially birds, of one of the most magnificent and popular Lake District valleys, the valley of Great Langdale, and the coast of Morecambe Bay.



Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early August to early October 2015.

Headlines The headline bird in a rarity-packed period was undoubtedly Britain's first Acadian Flycatcher, in Kent, although the few lucky observers of the Red-billed Tropicbird off Cornwall might disagree. Aside from a decent smattering of Nearctic shorebirds, the North American highlights included a 'Northern Harrier' in Orkney, Swainson's Thrushes in Orkney and Shetland, Grey-cheeked Thrushes in Shetland and Scilly, with the latter archipelago also hosting a Red-eyed Vireo and Blackpoll Warbler, whilst the Outer Hebrides pulled in a Buff-bellied Pipit. Inevitably, the Northern Isles scored heavily with eastern vagrants including a Siberian Thrush on Fair Isle, single Thick-billed, Pallas's Grasshopper and Eastern Olivaceous plus three Lanceolated Warblers. Up to eight Pallid Harriers, five Booted Warblers and double figures of Blyth's Reed Warblers arrived at widely scattered locations, but with a distinct northerly bias. Farther south, a Blyth's Pipit in Norfolk and Pied Wheatear in Yorkshire were the highlights, although neither lingered for more than a day. A Short-toed Eagle put in a brief appearance in Hampshire, as did a Little Swift, whilst an Audouin's Gull in Essex and Zitting Cisticola in Sussex were equally hard to catch up with. There was a large influx of Cattle Egrets into southern England and, in addition to those species mentioned below, good numbers of Wrynecks *Jynx torquilla*, Barred Sylvia *nisoria* and Icterine Warblers *Hippolais icterina*, Pied Flycatchers *Ficedula hypoleuca*, Common Redstarts *Phoenicurus phoenicurus*, Whinchats *Saxicola rubetra* and Tree Pipits *Anthus trivialis* drifted across the North Sea in favourable conditions.

Cackling Goose *Branta hutchinsii* Exe Estuary (Devon), 27th September to 6th October; Findhorn Bay (Moray & Nairn), 2nd October. **Red-breasted Goose** *Branta ruficollis* Landguard (Suffolk), then Frinton-on-Sea (Essex), 30th September. **American Wigeon** *Anas americana* Records from Argyll, Dumfries & Galloway, Northumberland, Orkney and Co. Wexford. **Blue-winged Teal** *Anas discors* Lough Beg (Co. Derry), 5th September. **Ferruginous Duck** *Aythya nyroca* Records from Avon, Hampshire and Surrey. **Lesser Scaup** *Aythya affinis* Blagdon Lake, long-stayer to 26th August, then Chew Valley Lake (both Avon), 30th August to 29th September. **King Eider** *Somateria spectabilis* Nairn (Moray & Nairn), 20th–24th September; Annagh Head (Co. Mayo), 20th September. **Surf Scoter** *Melanitta perspicillata* Records from Angus & Dundee, Denbighshire, Lothian, North-east Scotland and Outer Hebrides.

White-billed Diver *Gavia adamsii* Nairn, 4th October. **Zino's/Fea's Petrel** *Pterodroma madeira/feae* At sea, 16 km SSE of St Mary's (Scilly), 16th August; Kilcummin Head (Co. Mayo), 23rd August; Flamborough Head then Scarborough, 8th September, Spurn (all

Yorkshire), 9th September. **Cory's Shearwater** *Calonectris borealis* Porthgwarra (Cornwall), 130, 25th August. **Balearic Shearwater** *Puffinus mauretanicus* Berry Head, 406, 21st August, 208, 26th August, 141, 11th September, Prawle Point, 246, 26th August, Start Point (all Devon), 168, 13th September; Rame Head, 177, 26th August, Pendeen (both Cornwall), 153, 12th September. **Macaronesian Shearwater** *Puffinus baroli* Pendeen, 31st August; Strumble Head (Pembrokeshire), 31st August. **Wilson's Storm-petrel** *Oceanites oceanicus* In Ireland, Mizen Head (Co. Cork), 12th August; two off Baltimore (Co. Cork) on 15th, 16th and 29th August; Bridges of Ross (Co. Clare), 25th August. Off Scilly from pelagics, singles on five dates 14th–27th August, plus two on 20th, then singles. 10th and 15th September. **Red-billed Tropicbird** *Phaethon aethereus* Porthgwarra, 28th August.

Little Bittern *Ixobrychus minutus* Old Moor (Yorkshire), long-stayer to 13th August. **Night Heron** *Nycticorax nycticorax* Swillington Ings (Yorkshire), 18th August to 3rd September. **Cattle Egret** *Bubulcus ibis* Influx along English south coast 30th August with 25, Brighstone (Isle of Wight), 23, Coward's Marsh (Dorset), 22, Ibsley Common (Hamp-

shire), and other records from Carmarthen-shire, East Glamorgan, Gwent, Kent (two), Somerset (four) and Sussex. **Purple Heron** *Ardea purpurea* Records from Cambridgeshire, Co. Cork, Gloucestershire, Somerset and Suffolk. **Black Stork** *Ciconia nigra* Long-stayers in Dorset to 12th August, Lincolnshire to 1st September, North-east Scotland to 23rd August and Yorkshire to 15th September. Others Bexhill (Sussex), 12th August to 6th September; Wadebridge (Cornwall), 17th August; Landguard, 28th August, same Clacton (Essex), 28th August; Staines Moor (Surrey), 18th September. **Glossy Ibis** *Plegadis falcinellus* Records from Cheshire & Wirral, Co. Cork, East Glamorgan, Essex, Fair Isle (five), Lancashire & N Merseyside, Outer Hebrides, Scilly, Somerset and Co. Wexford.

Black Kite *Milvus migrans* Radyr (East Glamorgan), 6th September. **Short-toed Eagle** *Circus gallicus* Braishfield (Hampshire), 14th September. 'Northern Harrier' *Circus cyaneus hudsonius* North Ronaldsay (Orkney), 25th September to 6th October. **Pallid Harrier** *Circus macrourus* In Shetland, one or two in South Mainland, 23rd August to 11th September; Unst, two, 13th–22nd September, one to 2nd October; Melby, then Dale of Walls, 22nd September; Yell, 27th September. Elsewhere Fair Isle, 13th–21st September; St David's Head then Ramsey Island (Pembrokeshire), 22nd September; Worth Marshes (Kent), 23rd September; Spurn, 29th September; The Burgh (Sussex), 29th September to 6th October; Tarbat Ness (Highland), 4th October.

American Golden Plover *Pluvialis dominica* No fewer than 13 in Ireland, most in mid/late September; also Cumbria, Orkney (two), Scilly and Shetland (two). **Pacific Golden Plover** *Pluvialis fulva* Myroe Levels (Co. Derry), 23rd August to 6th September. **Kentish Plover** *Charadrius alexandrinus* Brownsea

Island, 1st September; Ferrybridge (both Dorset), 24th September. **Broad-billed Sandpiper** *Calidris falcinellus* Banks Lane Lake (Yorkshire), 26th August. **Baird's Sandpiper** *Calidris bairdii* Seaton Marshes (Devon), 15th August; Castletown (Highland), 24th August; Scorton GP (Yorkshire), 26th August; Tiree (Argyll), 29th September to 2nd October. **White-rumped Sandpiper** *Calidris fuscicollis* Long-stayers Norfolk and Yorkshire, with new arrivals in Co. Cork, Co. Dublin, Kent, Norfolk (another two), North-east Scotland and Outer Hebrides. **Buff-breasted Sandpiper** *Calidris subruficollis* Records from Argyll, Cornwall (three), Dorset, Co. Durham, Co. Kerry, North-east Scotland, Orkney (two), Outer Hebrides (two), Scilly and Co. Wexford (two). **Semipalmated Sandpiper** *Calidris pusilla* Inny Strand, Waterville (Co. Kerry), 19th August, perhaps same 28th September to 1st October; Slimbridge (Gloucestershire), 28th September to 5th October. **Wilson's Phalarope** *Phalaropus tricolor* Par Beach (Cornwall), 16th August; Frampton Marsh (Lincolnshire), 8th September; Pannell Valley CP (Sussex), 19th September; Vange Marshes (Essex), 20th September to 3rd October. **Red-necked Phalarope** *Phalaropus lobatus* Records from Co. Donegal, Herefordshire, Kent, Lincolnshire (1–2), Suffolk (two) and Yorkshire. **Terek Sandpiper** *Xenus cinereus* Salthouse (Norfolk), 24th August. **Spotted Sandpiper** *Actitis macularia* Coate Water (Wiltshire), 16th–27th August; Teign Estuary (Devon), 17th August; Bryher (Scilly), 21st September.



408. Juvenile Pallid Harrier *Circus macrourus*, Unst, Shetland, September 2015.

Brydon Thomason

Graham Catley



409. Juvenile Red-footed Falcon *Falco vespertinus*, Gibraltar Point, Lincolnshire, September 2015.

Greater Yellowlegs *Tringa melanoleuca* Whippingham (Isle of Wight), 23rd September to 6th October. Lesser Yellowlegs *Tringa flavipes* Brockholes, 20th August; Conder Green (both Lancashire & N Merseyside), 23rd–26th August; Clogheen Marsh, 30th September, then White's Marsh (both Co. Cork), 1st–6th October. Marsh Sandpiper *Tringa stagnatilis*

Cley, 2nd–3rd October. Long-billed Dowitcher *Limnodromus scolopaceus* Yell (Shetland), 8th–13th September; Skokholm (Pembrokeshire), 20th–24th September; Tacumshin and Rosslare (Co. Wexford), 22nd–26th September. Pennington/Keyhaven Marshes (Hampshire), 23rd September to 6th October; The Gearagh (Co. Cork), 29th September.

Gull-billed Tern *Gelochelidon nilotica* St Mary's Island (Northumberland), 23rd August. White-winged Black Tern *Chlidonias leucopterus* Records from Derbyshire, Devon, Co. Dublin, Essex, Kent (three), Lancashire & N Merseyside, Lincolnshire, Norfolk and Yorkshire. Forster's Tern *Sterna forsteri* Soldier's Point (Co. Louth), 22nd–26th

August; Rush and Rogerstown (Co. Dublin), 6th–27th September. Bonaparte's Gull *Chroicocephalus philadelphia* Long-stayer, Oare Marshes (Kent), to 23rd August; Teignmouth, 23rd August; Dawlish Warren (both Devon), 17th–19th September and 6th October; Lossiemouth (Moray & Nairn), 4th–6th October. Ross's Gull *Rhodostethia rosea*

Brora (Highland), 12th September. Audouin's Gull *Larus audouinii* Holland Haven (Essex), 13th September.

Alpine Swift *Apus melba* Cheddleton (Staffordshire), 12th August; St Osyth (Essex), 22nd August; Newmarket (Suffolk), 22nd August; Little Orme (Caernarfonshire), 5th–6th October. Little Swift *Apus affinis*

James Lowen



410. Acadian Flycatcher *Empidonax virescens*, Dungeness, Kent, September 2015.

Titchfield Haven (Hampshire), 18th September. **European Bee-eater** *Merops apiaster* Up to four long-stayers (including juvenile) at Lower Gelt breeding site to 8th September, one of same Warwick Bridge (both Cumbria), 9th September. Elsewhere records from Ayrshire, Dorset (two), Flintshire, North-east Scotland (four), Orkney, Shetland (seven) and Staffordshire. **Red-footed Falcon** *Falco vespertinus* Records from Fife (two), Highland, Kent, Lincolnshire (up to three), Norfolk (two), North-east Scotland, Northumberland, Somerset and Yorkshire (two). **Gyr Falcon** *Falco rusticolus* Poulmasherry (Co. Clare), 3rd October.

Acadian Flycatcher *Empidonax virescens* Dungeness, 22nd September. **Red-eyed Vireo** *Vireo olivaceus* St Agnes (Scilly), 25th September to 2nd October. **Lesser Grey Shrike** *Lanius minor* Lunna (Shetland), 25th August; Cromer (Norfolk), 28th August. **Woodchat Shrike** *Lanius senator* St Mary's, 19th August; Blakehill Farm (Wiltshire), 28th–29th August; Garinish (Co. Cork), 29th September; Lizard (Cornwall), 30th August; Nosterfield (Yorkshire), 13th–19th September. **Short-toed Lark** *Calandrella brachydactyla* Tacumshin, 25th September; St Mary's, 27th September. **Red-rumped Swallow** *Cecropis daurica* Dungeness, 30th August; Porthcurno (Cornwall), 27th September.

Greenish Warbler *Phylloscopus trochiloides* Influx from 14th August with eight during 19th–25th August, including Co. Durham (two), Fair Isle, Fife, North-east Scotland (two), Northumberland (two), Orkney (two), Shetland and Yorkshire (two). **Arctic Warbler** *Phylloscopus borealis* Records from Fair Isle, Lothian, North-east Scotland, Shetland (three) and Yorkshire (two). **Yellow-browed Warbler** *Phylloscopus inornatus* Large and

early influx in September with ten, Fair Isle, 9th September, then 53 on 21st and 76 on 28th. Elsewhere in Shetland, at least 138 on 22nd, and up to 128 daily to the end of September; other peaks of 31 on North Ronaldsay, 21st September, and 26 at Spurn, 4th October. **Dusky Warbler** *Phylloscopus fus-catus* Grutness (Shetland), 5th October. **Western Bonelli's Warbler** *Phylloscopus bonelli* Porthgwarra, 17th August; Portland Bill, 22nd and 26th August; St Mary's, 24th–27th August and 19th September; Galley Head (Co. Cork), 8th and 17th September; Sumburgh Head, 14th–18th September; Unst (both Shetland), 15th–18th September. **Western Bonelli's/Eastern Bonelli's Warbler** *Phylloscopus bonelli/orientalis* St Agnes, 21st August; Bass Point (Cornwall), 22nd August; Salcombe (Devon), 27th August; Billinge (Lancashire & N Merseyside), 31st August; St Mary's, 19th and 24th September. **Sub-alpine Warbler** *Sylvia cantillans* St Mary's, 23rd August and 26th September; Flamborough Head, 1st September, 18th September to 1st October; Lewis (Outer Hebrides), 4th–5th September; Kelling (Norfolk), 8th September; Mossbank (Shetland), 25th September to 4th October. **Pallas's Grasshopper Warbler** *Locustella certhiola* Isbister (Shetland), 11th–12th September. **Lanceolated Warbler** *Locustella lanceolata* Dale of Walls, 26th September; Fair Isle, 27th September; Out Skerries (Shetland), 5th October. **Thick-billed Warbler** *Iduna aedon* Quendale (Shetland),



George Petrie

411. First-winter Blyth's Reed Warbler *Acrocephalus dumetorum*, Hestingott, Shetland 2015.

Recent reports

24th September. Eastern Olivaceous Warbler *Iduna pallida* Whalsay (Shetland), 12th–16th September. Booted Warbler *Iduna caligata* Fair Isle, 19th–22nd August; North Ronaldsay, 21st–22nd August; Gramborough Hill (Norfolk), 22nd–23rd August; Sumburgh, 22nd August and 9th–14th September. Melodious Warbler *Hippolais polyglotta* Records from Co. Cork (two), Cornwall (four), Dorset (three), Co. Galway, Scilly, Shetland, Sussex and Co. Wexford. Aquatic Warbler *Acrocephalus paludicola* Wheldrake Ings (Yorkshire), 12th August; Fair Isle, 15th–16th August. Paddyfield Warbler *Acrocephalus agricola* Noss (Shetland), long-stayer to 16th August; Collieston (North-east Scotland), 28th–29th August; St Agnes, 7th September. Blyth's Reed Warbler *Acrocephalus dumetorum* At least seven in Shetland, with others Co. Cork, Cornwall, Co. Durham, Fair Isle, Orkney and Yorkshire. Zitting Cisticola *Cisticola juncidis* Climping (Sussex), 18th August.

Short-toed Treecreeper *Certhia brachydactyla* Dungeness, 10th September. Rose-coloured Starling *Pastor roseus* Up to five in Cornwall and two on Scilly; singles in Argyll, Devon, Dorset, Gloucestershire, Highland, North-east Scotland and Outer Hebrides.

Swainson's Thrush *Catharus ustulatus* Sanday (Orkney), 28th September; Unst, 4th October. Grey-cheeked Thrush *Catharus minimus* St Agnes, 23rd–24th September; Ollaberry (Shetland), 28th September.

Siberian Thrush *Geokichla sibirica* Fair Isle, 5th October. Thrush Nightingale *Luscinia luscinia* Farne Islands (Northumberland), 15th–16th August; Fair Isle, 19th August; Thorne Moor (Yorkshire), 24th August. Red-flanked Blue-tail *Tarsiger cyanurus* Whalsay, 22nd September; Westray (Orkney), 5th October. Collared Flycatcher *Ficedula albicollis* Sumburgh, 21st September. Pied Wheatear *Oenanthe pleschanka* Spurn, 3rd October.

Citrine Wagtail *Motacilla citreola* Records from Co. Cork, Cumbria, Devon, Fair Isle (two), Norfolk, Orkney, Scilly, Shetland (two), Co. Wexford and Yorkshire. Blyth's Pipit *Anthus godlewskii* Stiffkey (Norfolk), 2nd–3rd October. Tawny Pipit *Anthus campestris* Gunner Point (Hampshire), 5th September. Olive-backed Pipit *Anthus hodgsoni* Fair Isle, 28th September and 5th October; Bolus Head (Co. Kerry), 30th September; Lerwick (Shetland), 2nd–5th October; Spurn, 3rd October; Gibraltar Point, 4th October; Scatness (Shetland), 5th October. Pechora Pipit *Anthus gustavi* Melby, 22nd September, then Loch of Norby (Shetland), 29th September to 2nd October; St Mary's, 24th September. Red-throated Pipit *Anthus cervinus* Tory Island (Co. Donegal), 30th September; Northwick Warth (Gloucestershire), 3rd–4th October; Lerwick, 3rd October; Scatness, 3rd October; St Mary's, 4th–5th October; Isle of May, 6th October. Buff-bellied Pipit *Anthus rubescens* South Uist (Outer Hebrides), 23rd September.

Rebecca Nason



412. Adult male Collared Flycatcher *Ficedula albicollis*, Sumburgh, Shetland, September 2015.

Rustic Bunting *Emberiza rustica* In Shetland, singles on Foula, 20th–23rd September, Bressay, 24th September and Unst, 5th October; elsewhere Lundy (Devon), 27th September to 1st October, Cape Clear (Co. Cork), 5th October. Black-headed Bunting *Emberiza melanocephala* Dale of Walls, 24th August.

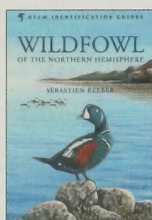
Blackpoll Warbler *Setophaga striata* St Agnes, 23rd September.

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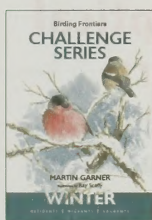
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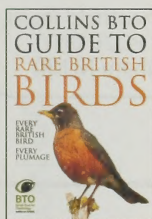
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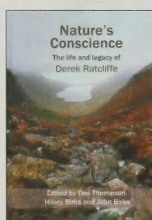
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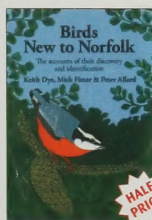


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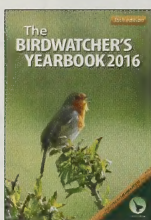
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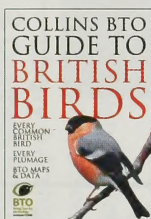
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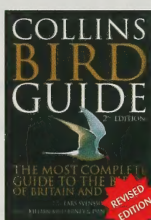


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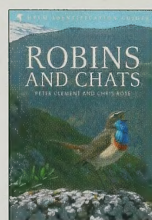
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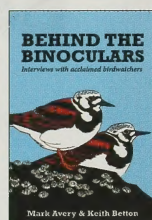
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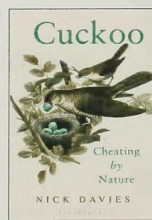


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